

# THE AMERICAN FARMER

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## SILOS AND ENSILAGE.

### The Method of Building Silos, and the Best Way of Filling Them.

EDITOR AMERICAN FARMER: Please answer these queries either by private letter or through the columns of your valuable paper.

1. What grasses are best suited to making ensilage; or, are grasses and grains mixed better?
2. Does whatever is used have to be cut fine before being put into silos?
3. Will silos work all right in as cold climate as North Dakota? What will prevent the composition becoming a frozen mass?
4. Why doesn't the rustilage, after it becomes heated, continue to heat and decompose like a manure heap?
5. Will you some time please give plans for constructing silos?
6. When should they be filled? Any information you may give will be gratefully received.
7. I am located on a small stream in which there is ample water for irrigation—yes, for thousands of acres, but the great trouble is to get the water where we want it. The banks range from 5 to 10 feet high. One having money enough should of course dam the stream and ditch the water to where desired, but surely there is some cheaper way. There are places along this stream sufficiently swift to furnish considerable power. How does the bucket irrigating wheel work? What does one cost? Are they run by windmill or must the stream have sufficient power?

Please excuse ignorance and help enlighten and oblige a subscriber.—B. L. HORDAWAY, Williston, N. D.

1. In the United States corn is most generally used for silage. But many varieties of sorghum are also used, and pearl millet, alfalfa, soja bean, clover, cowpeas, rye, etc. In Minnesota Southern Ensilage corn is found to produce twice as much fodder as the Minnesota Dent, Leaming's Sibley's Pride of the North, etc., but the medium-sized Dent corn had a higher nutritive value,

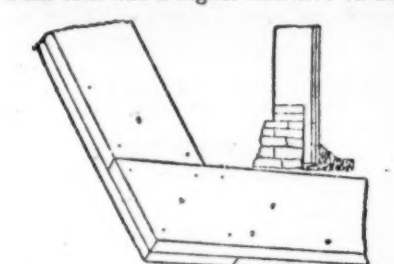


FIG. 1.

and much labor was saved in handling it. The Dent varieties yielded more fodder and dry matter than either the flint or sweet varieties. In Wisconsin the Southern Horse Tooth gave most green fodder, protein, and sugar. In Vermont Wisconsin Yellow and Pride of the North gave best results. The yield of sorghum is generally greater than that of corn, and it remains green longer in the field, thus protracting the time of filling the silo. The Wisconsin Station got very good results from clover silage, and found it richer in protein than corn. The question of mixing depends, we believe, on the maturity of the different kinds of forage silaged. Those that are in the same condition of maturity can be safely mixed in the silo.

2. Though some do not cut the silage, the general opinion is that it is much better to do so. The finer it is cut the closer will it pack and the better will it preserve. Many prefer it as small as half-inch lengths. The labor of cutting and filling is the hard work of ensilage. The corn can be cut by hand or power. A hand cutter can be bought for from 25 to 40 cents, or one can be made out of an old hoe or a piece of a broken scythe.

3. Silos do very well in Minnesota, Wisconsin, and Vermont, and should think they would do equally well in North Dakota.

4. This matter is not yet thoroughly understood, and to explain what is known of it requires a long explanation of the principles of fermentation. As a partial and makeshift explanation, we will in instance the fermentation of starch, which by different stages of fermentation changes first to sugar, then to alcohol, next to acetic acid, and then to putrefaction. The silage goes through one stage of fermentation, in which yeasts and bacteria play complex parts. After heating, the silage settles, the air is excluded, and further fermentation is largely prevented.

5. There is an infinite number of ways of building silos. The first, built in France and England, were of brick and stone, and this practice was at first followed in this country. Now, almost everywhere wood is preferred. The best form is circular, as it gives more contents to the same amount of wall; and still more important, it has no corners, where the ensilage is imperfectly packed and rendered liable to spoil. The location should be as near the barn or feeding place as possible, as ensilage is heavy stuff to handle. The size depends upon the number of animals to be

fed and the number of days that they are to depend on silage. For a cow 30 to 45 pounds, or 1½ bushels a day, is usually estimated, with one-half this for a horse

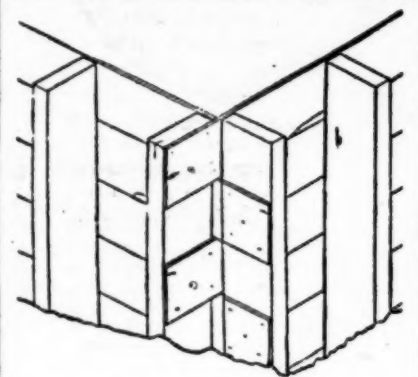


FIG. 2.

and one-third for a sheep. Average 40 pounds a day for a cow for 150 days in a year would make 6,000 pounds, or three tons. Silage ranges in weight from 25 to 50 pounds per cubic foot, depending upon the greenness of the corn and the depth in the silo. The average has been estimated at 30 pounds. This would require for each cow a mass 8 feet long by 5 feet deep and 5 feet broad. From this it will be easy to calculate how big the silo should be.

Bulletin No. 80, of the North Carolina Experiment Station, gives the following excellent directions for building a two-room silo to hold from 72 to 120 tons of silage, enough for 20 cows, or their equivalent in other farm animals, for 150 days:

#### THE FOUNDATION.

If the location is dry the foundation may be a trench one foot square, filled with small stones, on which stones or bricks are laid in mortar 6 inches to 1 foot high and 10 inches thick. It should be 23 feet 2 inches by 15 feet 10 inches wide over all. The loose soil should then be thrown out and trampled around the outside to shed surface water, and its place filled with tramped stones covered with clay. The silos, 2x10 inches, should be laid on the wall while fresh, and a few long spikes driven into the wall will help hold them in place. A second, 2x10, should be laid on the first and spiked down, observing to cross the corners, as shown in Fig. 1. This will securely tie the corners. The four planks for side sils should be just 22½ feet long, and the four for ends 15 feet. The partition sill should be 2x6, and the first piece should be 13 feet 6 inches long, and the top one may reach across the side sils and be spiked to them for a tie across, or this partition sill may be but a single piece, put on at the level of the top of the side sils, and have spikes driven into the foundation wall and side sils to stay it.

STUDDING AND BOARDING UP INSIDE.

Stand the center of the 2x10 by 20

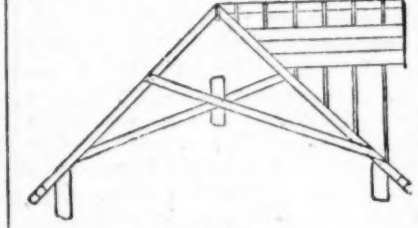


FIG. 3.

feet, studding on the sils 14 inches from the corner at each of the four corners; stay these, and at one corner begin boarding up the inside with boards one inch thick and of uniform width, so they can be readily be alternated at the corners, as shown by Fig. 2. As the boarding proceeds so the other studs can be readily held in place; set the end studs 18 inches apart from center to center, and the side stud 17 inches apart, measuring from the center of the end stud toward the middle of the silo. Each end will contain 10 studs, and the partition the same; but the end ones in the partition must be set back from the wall two or three inches. The back side will contain 15, and the middle one will be set so one of its sides will line with one edge of the partition studding. The seventh stud from each side in front will be moved toward the middle to line with the partition boarding, so they will stand but two inches apart, to leave a good doorway into each room. On the ends, boards (or plank) 15 feet long should be used, so there will be no splicing. This would also be a good length for the sides. The middle studs in front and the one in the back wall standing in the partition line shows tying the silo across very firmly by the first or horizontal boarding with the back side (see Fig. 2), while in front the whole length of the doors can be used for cross tying, but care must be taken that the long boards between vertically arranged doors are not interfered with, as these tie the building endwise.

#### THE ROOF.

Having now provided for the rough inside boarding, the roof is the next part

to build. Make it a square pitch and use 2x5 by 13 feet rafters, which will give projection enough to the roof. Tie these with 1x5 by 13 feet pieces, as shown in Fig. 3. It will require 15 pairs of rafters and collars, or ties, of which on one side the middle ones will be cut out to give place to the upper doors to be used in filling the silo. Cover with cheap lumber and shingle.

#### THE GABLES.

may be boarded up with the same cheap material as that put on the roof, or, if the outside is covered with good material, it should be carried on up the gables. One six-light sash should be put in each gable for light in the silo, but it is not essential, and is not included in the bill of material.

#### FINISHING THE INSIDE.

The silo is now 20 feet deep, including the sils and walls. The vertical matched and surface boarding should be long enough to reach from the bottom of the

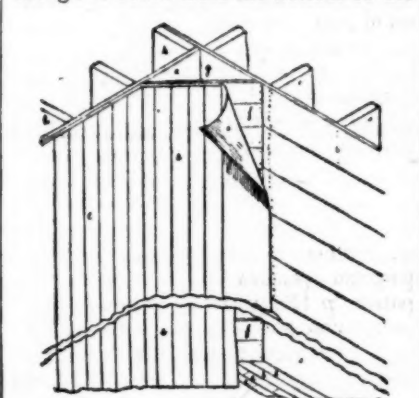


FIG. 4.

wall to the top of the studs, and as carefully matched as a floor. This inside lining must be of good material. Before nailing in there should be some air tight material, as tarred building paper, hung in strips from the top to the bottom, to lap two or three inches, and the boards then put on. At this point attention should be given to the corners. It will probably be economy to cut pieces across the corners two or three feet long, chamfer the edges so they will fit well, hang the paper and lay on the vertical siding. Something of an idea of the work on the inside may be gathered from Fig. 4, which shows: a, a bit of the foundation; b, sils; c, rough boarding; d, tarred building paper; e, vertical matched boarding; f, corner pieces, cutting off the corner; g and h, the tops of the studding.

#### THE DOORWAYS.

After the rough boards of the partition are put on the doorways will be 35 inches wide in the clear, if the partition boards are lapped out past the middle studs and cut off at the center of the studs on the opposite side. Nail in securely a one-inch piece as wide as the studs and as long as the door is high on each side. These will protect the studs and support the pieces put across the doorway to retain the silage. In putting up the vertical boards leave one inch from the ends of the horizontal boards to break joints, and finish at two inches from the stud on the partition. These doorways should be of uniform height, six feet, and four in number, two in each division. They will be 33 inches wide when completed. The pieces to fill up this space should be cut just three feet long for the first set, to match the horizontal boarding, and three feet one inch to fill between the vertical boards and partition, and when put up should be separated by tar paper. When the out-

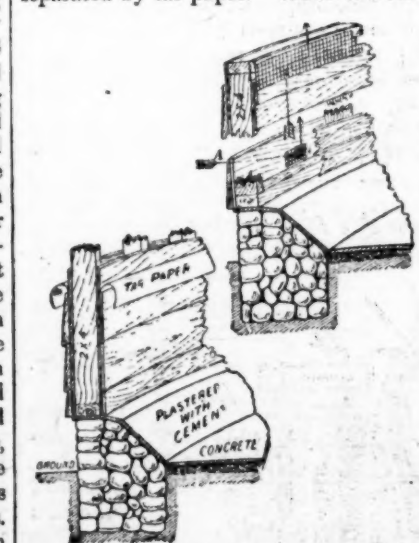


FIG. 5.

side is finished, swing doors may be put on the outside, if necessary, to protect from frost, or, if desired, for finish. In boarding outside use 2x4 or 3x3 studding on the corners to nail to. For convenience in filling the silo a door should be put above the partition over these doors, or on the opposite side, and a dormer roof raised over it, as shown in Fig. 3.

#### BOTTOM OF THE SILO.

If the silo is on dry ground, it will not

be necessary to more than pack in four or five inches of small stones and cover with puddled clay. If in a wet place, one or two drains should be made from it, and gravel and cement be put on the stones and the walls plastered up with cement.

#### COATING THE INSIDE.

Various mixtures, as well as clear coal tar or linseed oil, are recommended and used with varying success. The silo at the New York State Experiment Station at Geneva, N. Y., was built in the Fall of 1888, too late to be used that season. The inside boarding was of soft pine. A short time before using, in 1889, this silo was coated with paraffine and resin, to which was added enough of boiled linseed oil to prevent cooling too quickly on the brushes in the application. This made a glossy finish, resembling varnish, with considerable body to it. It hardened in a very short time after being put on, and seems to remain impervious to the action of the silage after two years' use. After removal of the first silage put in, some of which was in the silo nine months, this coating appeared as glossy as when first put on, except in places where silage had stuck; but on rubbing these places it was found to leave the surface bright. The bottom of this silo is a little below the level of the basement floor, and that part, as well as two of the walls to the level of the barn sils, are against stone walls and are plastered with cement, to which the mason gave an extra hard, smooth finish. After nearly emptying this silo the second time, the Director of the Station, Dr. Peter Collier, writes: "So far as the cement walls are exposed they show no noticeable disintegration or decay." The wooden walls are only slightly discolored in patches where the silage adhered. The wood does not seem to have suffered any decay. Some of the boards were examined with a knife, and none of them showed signs of decay." The mixture of ingredients for this coat was 7½ pounds of paraffine to 10 pounds resin, to which was added about one quart of oil. This amount, spread with a brush, should cover 400 to 450 square feet. A gentleman living in the neighborhood built a silo and coated it with coal tar; he writes about it as

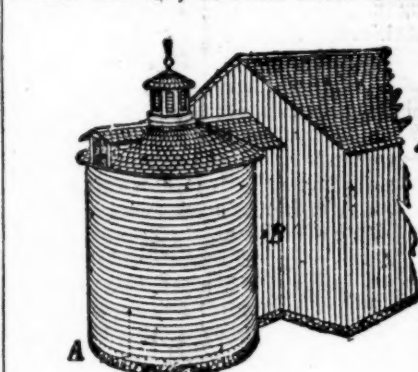


FIG. 6.

follows: "I put on coal tar boiled with some asphaltum (a gum) dissolved in it to harden it; applied it hot, but it cooled so quick it was a disagreeable job, and left a blotched-looking surface, but I think it answers a good purpose in the matter of keeping the sides dry. I have been told since I did it that a better way is to thin the tar with gasoline so it could be applied with a paint brush."

Bill of Material for Silo, two rooms, each 10x14 feet inside, 30 feet deep.

	Per sq. ft.	Value.
For sils—		
4 pieces 2x10 in. by 15 feet.	100	\$6.00
4 pieces 2x10 in. by 22½ feet.	150	9.00
2 pieces 2x10 in. by 15 feet.	30	6.00
For studding—		
40 pieces 2x10 in. by 30 feet.	1,200	60.00
40 pieces 2x10 in. by 20 feet.	800	40.00
For outside corner studs, 4 pieces 2x10 in. by 20 feet.	80	4.00
Inside rough, 100 pieces, 1x10 in. by 15 feet.	1,500	60.00
100 pieces, 1x10 in. by 20 feet.	1,000	40.00
Rafter ties, 30 pieces, 2x4 in. by 15 feet.	450	22.50
Rafter ties, 30 pieces, 2x4 in. by 20 feet.	600	30.00
Roof, common rough 1-inch lumber.	700	35.00
6,000 shingles.	150	9.00
Pine flooring, 30 feet long.	2,300	115.00
Surfaced and matched.	2,300	115.00
7,001		
Carpenter labor at \$2 per 1,000 and board.	222	98
Hardware—400 nails, 10 lbs. at 2½ cents.	25	25
200 nails, 10 lbs. at 2½ cents.	25	25
100 nails, 20 lbs. at 2½ cents.	25	25
50 nails, 100 lbs. at 2½ cents.	25	25
40 nails, 20 lbs. at 2½ cents.	25	25
Tarred building paper, 270 lbs. at 3 cents.	810	24.30
Two barrels lime, at \$4.33.	8.66	8.66
One barrel Rosin, at \$2.	2.00	2.00
1,500 brick, at \$5 per 1,000.	6.00	6.00
Mason laying brick.	8.65	8.65
Total cost of building.		\$130.15
At the rate of ensilage 30 pounds per cubic foot this silo would hold 120 tons, and cost per ton.		\$1.08
At 40 pounds per cubic foot this silo would hold 80 tons, and cost per ton.		1.31
At 30 pounds per cubic foot this silo would hold 120 tons, and cost per ton.		1.75

#### ROUND SILO.

The following cuts and descriptions are from Bulletin 228, Wisconsin Experiment Station. They show very plainly the construction of a round silo:

Fig. 5 shows the construction of all wood round silo. Sils, 2x4s, cut in sections on a radius of the silo circle, bedded in mortar and the nailed together; plates the same, spiked to tops of studding; studding, 2x4s, one foot apart; short lengths may be used lapped to get the depth. Sixteens and fourteens will give a silo 30 feet deep; lining made

from fencing ripped in two; outside sheathing the same; siding for silos under 28 feet, outside diameter, common siding rabbeted; for silos more than 28 feet outside diameter common drop siding or ship lap may be used. A, shows ventilator between studding; auger holes are bored at bottom between studding, and the boards lack two inches of reaching plate at top inside. Both sets of openings are covered with wire cloth to keep out vermin. There should be a line of feeding doors from top to bottom, each two or three feet by five feet, and about 2.5 feet apart.

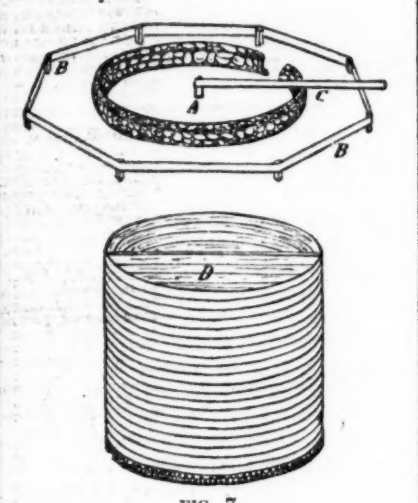


FIG. 7.

Fig. 6 shows two methods of roofing round silos and the manner of connecting them with a barn. A, A, shows where air is admitted between the studding to ventilate behind the lining; B, the feeding chute; C, C, filling window. The cupola is essential for perfect ventilation.

Fig. 7 shows method of laying and leveling foundation of a round silo, and a round silo with a single partition. A, center post with top level with top of proposed wall; B, B, straight edge boards nailed to stakes driven in ground; C, straight edge fixed to turn on a pin at A; B, B, all nailed level with top of post A; D, partition in round silo. It may be placed so as to come in the middle of the single line of doors, letting the same doors answer for both sides.

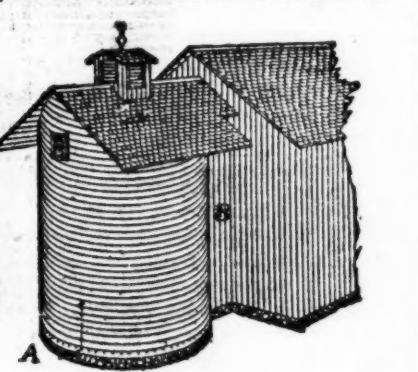


Fig. 8 shows the construction and ventilation of the walls of a rectangular silo. The sils are two inches narrower than the studding to leave air spaces between the sils and lining. A, is two inches of mortar made by stirring sand into coal tar, boiled until it is hard when cold. B, is bolt anchoring sill to wall, placed about four feet apart. C, ventilator between studding.

Round Silo, 150 tons—30 feet Inside Diameter, 30 feet Deep.

	Per sq. ft.	Value.
Foundation, 7.5 perches, at \$1.20.	90	\$10.80
Studs, 2x4 inches by 14 and 16 feet, 1,401 feet, at \$5.	1,401	7.00
Rafter, 2x4 inches by 12 feet, 305 feet, at \$6.	305	1.83
Boards, 2x10 feet, at \$8.	250	2.00
Shingles, 6,000, at \$1.50.	6,000	9.00
Siding, rabbeted, 2,600 feet, at \$14.	37.24	37.24
Lining, fencing, ripped, 2,800 feet, at \$10.	28.00	28.00
Tarred paper, 700 pounds, at 3 cents.	21.00	21.00
Coal tar, one barrel (in Raleigh).	5.00	5.00
Hardware, 60 cents per square.	13.29	13.29
Painting, at 60 cents per square.	6.00	6.00
Cementing bottom.	30.17	30.17
Carpenter labor, at \$2 per 1,000 and board.		8.65
Total.		\$130.51

6. It has now been pretty well settled that corn should be silaged stalks and ears together, and not be cut before it has reached the milk stage in the kernel. The Ohio Experiment Station directs that it should be cut when it begins to glaze, and the stalks begin to dry near the ground.

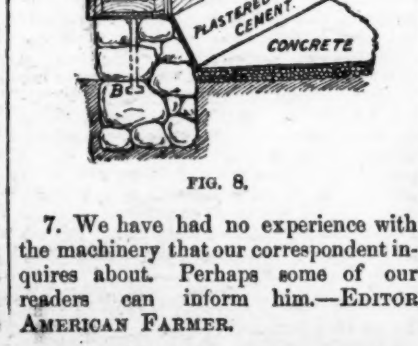
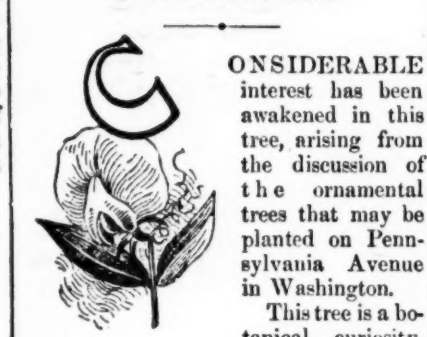


FIG. 8.

7. We have had no experience with the machinery that our correspondent inquires about. Perhaps some of our readers can inform him.—EDITOR AMERICAN FARMER.

## THE GINKGO TREE.

### Something of the Life of this Oriental Favorite.



CONSIDERABLE interest has been awakened in this tree, arising from the discussion of the ornamental trees that may be planted on Pennsylvania Avenue in Washington.

This tree is a botanical curiosity, and has given the men of science no little trouble to find a classification for it, as the veining is such as to mislead. In spite of its fern like foliage it has been classed with the cone bearers. Its nearest relative is the yew; but as no very marked resemblance exists between it and any other tree, it is thought that many of the links have been swept away which connect it with other members of the same family. No locality has yet been found where it grows wild, but sufficient fossil remains are widely scattered to prove that it was once an inhabitant of a great portion of the globe.

Its general appearance renders it a very ornamental tree, and one whose beauty is as great near at hand as in the distance. It may be propagated either by slip or seed, but the products of the two methods differ widely in form.

Trees grown from slips are irregular, with a tendency to grow crooked or horizontal boughs, while those raised from seed are very straight and are conical in outline. They range in mature trees from 40 to 100 feet in height, and from 6 to 12 feet in diameter.

The leaves are a delicate green till Autumn turns them to a pale lemon, the intervening shades being similar to those of the poplar under like influences. The leaves are fan or wedge-shaped, standing close together on the adult branches, but widely separated on the new shoots.

The fruit is round, about the color of an olive, but nearer the size of a wild plum. Its skin is leathery and the fruit possessed of a peculiarly disagreeable pungent flavor. The fruit is on a long stem not unlike that of a cherry.

The tree does not flower usually until 18 or 20 years old, and even then you are by no means sure of getting fruit. For years the botanists were unable to obtain one that would produce fruit, but at last one in Central Park, New York, bore. It was then ascertained that the tree was dioecious, or that it possessed sex. For years none but male plants were imported, but now there are several female trees in different parts of the United States.

There are some individual trees that are worthy of consideration. There is one at Andalusia, near Washington, that sprang from seed brought from Japan by a member of the first governmental expedition. This tree is now about 60 years old and is a magnificent specimen.



SPRAY OF GINKGO.

There is also another far-famed in Woodlands Cemetery, near Philadelphia, which was brought here as early as 1784 by Alexander Hamilton, and planted by him where it now stands. This is thought to be the oldest one in the United States. But the handsomest one of all is an old giant in Boston Common.

In the grounds of the Agricultural Department at Washington are two very handsome rows of Ginkgos leading from the main entrance to the gates. This is the finest grove in America. To the patience and energy of Mr. Saunders, the veteran Horticulturist and Gardener of that Department, are we indebted for this beautiful terrace, as well as much of the interest that has been awakened in this tree.

In laying out the grounds he left un-

planted the two strips where these trees now stand. He was unable to please himself with a tree that would outline the walk and yet in years to come not shut out too much of the view.



FLOWER OF GINKGO.

He said that one morning as he entered the grounds his eye rested upon one at the brow of the hill and he said: "That is the tree for my terrace," and he immediately sent to Vil Morrin, the famous French seed firm, and purchased the seed.

He it is who suggested to Capt. Powell that the Ginkgo be planted on Pennsylvania Avenue, and the probabilities are that if the property owners do not raise too serious objections that a row of these trees will be set out on the north side extending from First to Fifteenth streets.

One person in urging its cultivation says: "It is hardy, thrifty, and clear, and for beauty of ramification and foliage cannot be surpassed. It is tall, slender, and graceful. In Autumn its unique foliage of deep golden tint is most beautiful and attractive, and it is well into Winter before it sheds its pretty dress." While this is all true, its strongest recommendation is that it will stand civilization. One of the oldest specimens found in Japan is very near a large residence and it is still flourishing.



A, B, Stamens of male flower. C, Pistil of female flower. D, Fruit. E, Kernel. F, Cross section. G, Longitudinal section. H, Abnormal growth.

The Japanese make a use of the fruit, which it is doubtful that we will ever make. The fresh fruit is slightly roasted and a few pieces placed at each plate on the occasion of a State dinner. From time to time the epicurean eats a part of it to increase his appetite and stimulate digestion, for the same reason that the Mexicans partake of the liquid extract of the century plant.

#### Raising Oats.

Oats is one of the most productive of all grains when it is well grown. It needs cool weather and a thoroughly-pulverized soil. It also needs deep covering of the seed to secure a firm root-hold on the land. The Spring is too late to begin preparations for this crop. These should be made without delay. The land, if it is a corn stubble, as it usually is, need not be plowed, but a good working with a coulter harrow will do better than plowing. This may be repeated in a few weeks, and the land is then left for the Winter. In the Spring, as soon as the surface is dry enough, the harrow is again used cross-wise of the former course. Then the seed is sown, and at once covered by another cross-harrowing, which leaves it at just the right depth for this grain. The writer by this method has grown several crops of oats, none of which has been less than 60 bushels to the acre, and one, the best of all, yielded over 78 bushel per acre by measure, that weighed 45 pounds to the bushel.

#### Destroying Canadian Thistles.

EDITOR AMERICAN FARMER: I saw an article in THE AMERICAN FARMER of Dec. 1, entitled "The Canadian Thistle," and how to eradicate it. I think there is but little trouble to kill it. My experience is that crude petroleum oil will do so, without a doubt. Many farmers complained that they could not do it, having used almost all the stuff you mentioned in your article, but they that used the oil as I directed claim it is the only thing that kills the thistle.—B. NELSON, Box 108, Kittanning, Pa.





# Stock

## Yard Echoes.

If you must winter oxen with nothing to do, getting them in shape for beef after Spring work is done.

Where there is no artificial warmth, the animals have to furnish their own heat, and it must be done from the food which they consume.

When the calves are raised by hand they are less trouble, all things considered, if they are dropped in the Fall rather than in the Spring.

Make the barn as tight as boards and shingles and clapboards will make it, and see that it is made tight underneath so that the cold will not drive in there.

The colder the weather the more attention should be given to the stock. Keep them warm and in close quarters when the thermometer drops below zero.

The kind of food which may be sufficient to keep grown animals in good condition is not sufficient for young ones. An extra allowance must be made for increase of bone and muscle.

Frostbitten hay and poor marsh hay should not be fed to the cows in large quantities, as it will affect the quality of the butter. A little marsh or salt hay is good, and makes a fine relish for them.

It is not what is eaten, but what is digested, that benefits and fattens the animal. With a balanced ration and some bulky food it will eat more and retain its appetite than when fed only on fattening food.

The bull should be made to do much more toward earning his living than he does. How? is the problem. He is not always governable in a team. Making him work a tread mill to saw wood, churn milk, etc., has been suggested.

Animals must be kept growing from the time they are born until they are led to the slaughtering house. But there is a difference between growing and growing fat. All of the young animals should be growing rapidly, but growing size, bulk, strength, bone and sinew, and not in fat.

To protect cattle from troublesome fleas, a sponge dipped in the kerosene emulsion may be rubbed over the skin. A little creosote added to the emulsion, so as to give it a smoky odor, will help to make it more effective. For the large lice, the same proportion of kerosene oil to emulsion will be an improvement. This is the best application for the horn fly, as well as all other insect vermin.

## Care of Horses.

In an address before the Massachusetts Board of Agriculture, the Hon. John E. Russell said, in regard to the horse:

"Our knowledge of him begins at the very beginning of history, and comes along in the progress with man himself. Farmers need horses, but I can hardly recommend the breeding of them on our New England farms. Horses cannot be bred or raised without proper feeding. The horse, like the human being, requires an appetite to eat and a stomach to assimilate food. A great deal depends on the way the horse is treated. The majority of men are kind to horses, but occasionally a horseman is found no more fit to take care of or to associate with a horse than with a wild animal. There is no rule to go by in the stable for the care of horses or for the amount of food to be fed. Much depends on the size, disposition, and amount of work to be done. I believe that one of the most frequent causes of disability, feebleness and weakness in horses is caused by over feeding."

## Feeding Pumpkins.

Pumpkins are far more nutritious than is generally supposed. Some analyses made by Prof. Storor, of the Bussey Institute, go to show that the dry matter of these gourds is far more nutritious than the best kinds of grains. The following figures will show this very clearly:

Composition of the dry matter of the pumpkin.	Albuminoids, per cent.	Carbohydrates, per cent.	Fat, per cent.
Flesh of pumpkin.....	12.45	61.45	1.00
Flesh of squash.....	10.37	75.83	3.29
Rind of pumpkin.....	19.05	44.78	3.62
Rind of squash.....	19.61	59.11	6.28
Contents of pumpkin.....	25.91	50.54	17.04
Contents of squash.....	25.99	58.58	18.74

There is a common error that cows should not be allowed to eat pumpkin seeds, as these have a tendency to dry up the milk. Careful experiments have shown this not to be true, and therefore the fear of it should not be allowed to prevent the farmer availing himself of this important food supply.

## Bad Times in Texas.

Capt. Joseph F. Nash, an extensive ranchman, reports that in many localities in western Texas no rain has fallen for five months and consequently there is no grass, the range in many sections having been completely eaten up. Range cattle have been reduced to skeletons and even now are dying by hundreds. With the advent of the cold weather, which generally strikes Texas about the latter part of December or the early days of January, the loss of cattle is expected to be frightful. Sheepmen are as badly off as cattlemen, as their range is exhausted, and the low price for which wool is selling (7 1/2 cents a pound) in the San Antonio market will not cover the cost of production.

## The Silo in Summer.

Farmers have heretofore regarded the silo as only a resource for winter feeding, but the Vermont Experiment Station has demonstrated that corn ensilage is a much more reliable and satisfactory method of Summer siloing than any other, and that silage fed alongside the best fresh cut corn in the Fall gave the best results. This view is confirmed by the experience of several practical farmers in various parts of the country who gave the Summer silo a thorough trial. The Summer silo should be made deeper and narrower than the Winter one, so as to expose as little surface as possible to the fermentative air.

## Condemned Cattle.

Secretary Edge, of the Pennsylvania State Board of Agriculture, accompanied by the State Veterinary Surgeon, Dr. Bridge, examined the herd of cattle belonging to Hiram Warner, near Philadelphia, which had been reported as affected with tuberculosis, and upon applying the usual test it was found that 11 head were affected. It is probable that they will be killed.

## Stock Diseases in Illinois.

The eighth report of the Illinois State Board of Live Stock Commissioners says that during the past year the principal cattle diseases dealt with were anthrax and actinomycosis, which were raging for some time in the Counties of Wayne, Clay, Edwards, White, and Hamilton, and caused so many deaths. Many people were infected while handling the disease, and one man nearly lost his life. From June 15 to Oct. 15 100 horses and mules valued at \$50 each, 600 cattle valued at \$20 each, 250 hogs valued at \$8 each, and 20 sheep valued at \$2 each, died from the disease, entailing a loss upon owners of some \$20,000.

Anthrax has existed to a limited extent in Clay County for the past seven years, in Wayne County three years, and in Edwards County one year. The plan adopted by the board to fight the disease proved successful. They caused local boards of health to be organized in all Counties where the disease existed. Strict rules were adopted providing for the cremation of all animals dying from this disease, and the prompt disinfection of all infected premises.

Boards of Health should maintain their vigilance, as neglect to burn the dead animals may cause another outbreak. Of cattle affected with actinomycosis the board have during the year quarantined 1,272, of which 1,006 were slaughtered and condemned as unfit for food.

Of diseases of horses, glanders has appeared in 20 Counties. Sixty two horses and four mules were found diseased; 208 horses and 12 mules were quarantined for exposure; 71 horses and four mules were destroyed at an expense of \$2,754.

## Animal Fertilizers.

The quantity of manure produced per year by the various classes of animals was estimated by Bousianguault as follows:

	Lbs.	Tons
Horse, solid (the liquid).....	12,000	2,700
Horse, solids.....	15,000	3,400
Cows, liquids.....	30,000	6,800
Cows, solids.....	8,000	1,800
	25,000	5,500

Value per ton of manure produced by various classes of animals.

Horses.....	\$2 50
Cows.....	4 25
Sheep.....	4 00
Pigs.....	2 25

## National Live Stock Association.

At the fifth annual meeting at Kansas City the following officers were elected: President, W. H. Thompson, Jr., Chicago; Secretary, C. W. Baker, Chicago; Treasurer, L. B. Doud, Chicago; First Vice-President, Frank Cooper, Kansas City; Second Vice-President, Thomas B. McPherson, Omaha; Third Vice-President, J. F. Vincent, Peoria; Fourth Vice-President, J. W. Broderick, St. Louis; Fifth Vice-President, A. J. Simon, Sioux City; Sixth Vice-President, E. B. Van Norman, Milwaukee.

## Buffalo Stock Farm.

Mr. Charles Allard, of Montana, is raising buffalos on a big ranch in the Flathead Indian Reservation in that State. He has about 120 head of full-blooded buffalos on his ranch, and he values them at \$75,000. He passed through Butte, Mont., two weeks ago with a herd of 33 buffalos, driven by expert cowboys, on his way to Anaconda, where he was to receive a herd of 31 full bloods and 15 half and quarter breeds which he had bought from Buffalo Jones, of Omaha. The citizens of Anaconda were then eager in expectation of a big fight for supremacy between the leaders of each herd when the two herds should be turned together, and Allard had already hired the fair grounds for the show. He will sell the buffalos he raises to menageries and public and private parks, and he expects to make lots of money.—Omaha Bee.

It takes a leaf just three weeks to unfold itself from the time it first appears in the leaf bud. Maple leaves are more rapid than others, and are perfect in two weeks.

## CHOLERA AMONG HOGS.

A Western Town that Has Grown in Eight Years.

EDITOR AMERICAN FARMER: During the past three or four months the ravages of hog cholera have become more formidable than for years; but lately the people are awakening more to the swine interest. Years ago, but few farmers raised hogs at all, but now almost every farmer has some. Renters have from 10 to 50, and those that own farms have from 20 to 200. This makes a very large investment in swine, as the farms are divided in 80 acres many times.

In September the genuine hog cholera broke out here and there over the country, every 10 or 15 miles apart. Since then it has spread with such alarm that many breeders have sold their hogs to keep the disease from infecting their places. Other breeders have lost quite heavily. The people are waking up to many errors they have made in being so careless with the cholera, and it is hoped it will soon be checked. Eight years ago, we came to the eastern part of this State, and then it was simply a cornfield. The inhabitants only seemed to care for a living, and to get it they simply looked to corn. The climate is good, and great yields were in order. But few good residences were here. A lot of two-room houses with a hay barn comprised the improvements. Land was \$20 to \$25 per acre. Now this land has almost all changed hands. Eastern people have come here while the pioneers have gone West. Fine houses, barns, windmills, orchards, pastures, etc., are in place of the cornfields. Each farm is endowed with fine stock, poultry, and machinery, and the land is now priced at \$55 to \$60 per acre.—JAMES PEARSON, Ashland, Neb.

## To Make Money on Pork.

EDITOR AMERICAN FARMER: As I have made a specialty of pork raising for several years, and been reasonably successful at it, I think it likely that my experiences may be of benefit to my brother grangers. My practice is to grow clover for Summer pasture of the pigs, and by keeping a dairy for fine butter making, to utilize the sweet skimmed milk for feeding them. The cows are fed on ensilage, made the previous Fall, and this is helped out with roots, which are largely fed to the brood sows in the Winter. The sows thus fed have two litters a year, and some of them rear more than 20 pigs each year. My pigs are of the Cheshire breed, well known as prolific breeders. The first litters come in March, and are sold during the Summer as small pigs, but they, nevertheless, weigh an average of 300 pounds. These are out of the way in November, by which time the second litters have been weaned and are ready to put up for feeding on the roots and the soft corn, the latter being the best grain food. By February, or sooner, the litters are ready for sale, and by high feeding and warm quarters, partly in underground pens, they easily reach a weight of 300 pounds. In this way the pork is made for such a price as to make the largest profit.

I believe that it is thus practicable to make dressed pork for two cents a pound at a profit, though to this assertion I know there will be a strong dissent from many of my brethren who think they know quite as much of hog raising as I do, if not more.—J. Q. A. S., Onondaga County, N. Y.

## Curing Hams.

R. T. Nesbit, Commissioner of Agriculture for Georgia, gives the following recipe: Trim smoothly, avoiding gashes in the flesh; take off the feet at the bottom joint below the knee, and also the small bone that connects them; treat with salt the same as directed for the other meat. After packing in the salt allow the hams to stand for a day or two to draw out the blood. To each 100 pounds of ham use 8 or 10 pounds of salt, two ounces of saltpeter, two pounds of brown sugar, one ounce of red pepper, dissolved, or several dozen broken pods will answer. To these ingredients add four or five gallons of water, mix thoroughly, and pour over the hams, which must be previously packed in tight casks or barrels, allowing the brine just to cover the hams well, and place a weight on top to keep them under. Before pouring it on, to be sure that the brine is strong enough, see if it floats an egg; if not, add more salt. Let the hams remain from four to six weeks in this brine, and then hang by the skin at the end of the leg and smoke gently for several weeks with green hickory wood until dry and brown. In March, before the flies start, and choosing a windy day for the work, take the hams down, and let the fly may have deposited eggs, scald each ham and place in the wind to dry; then wrap in paper, and if hay or straw is convenient, as a more perfect protection, wrap this also around, tying into place. Then put the hams into bags, pack down, tie up and hang in that position until needed. Since trying this recipe I have never used any other, and the bacon is fine enough to tempt an epicure. The chins and shoulders may be treated similarly, if desired.

## Of Interest to Farmers.

(From Iowa Homestead.) All farmers and breeders of swine have and will have more or less difficulty with soys not being able to deliver their pigs at farrowing time. To lose a farrowable bred sow next Spring means, with her litter, say where from \$75 to \$200 loss, at present prices for pork. Mr. J. N. Reimers, of Davenport, Ia., has overcome all this difficulty by his invention of Reimers' Patent Pig Forelegs. They are long, light, and smooth, and are nicely timed and are as bright as silver. It is impossible to injure a sow with them, as is often done by the use of wire hooks so commonly used. These forelegs clamp over the head or foot of the pig and do not injure it. See the advertisement elsewhere for description.

A quart of cream should yield from 13 to 15 ounces of butter.

## SHEEP AND WOOL.

### Sheeping.

There should always, during the Winter be a little fresh hay, where the sheep can get at it.

In purchasing sheep, great care should be taken not to purchase from flocks except they be known to be free from intestinal parasites.

Do not catch sheep by the wool. If they are too wild to take by the neck, have a shepherd's crook to hook on the hind leg and draw the animal out of the flock without disturbance.

Sheep are fastidious feeders, and will pine rather than eat food which they have already picked over. They should also be fed a small grain ration every day; say a pint per head of mixed oats, peas, and corn, and a little bran. Always keep plenty of salt within their reach, and they will then take what they require. Keep the shed dry and clean.

In the arid portions of Texas sheep frequently go three weeks without other water than the dew on the grass and the cactus leaves they crop. Generally, they are driven to water once a week. On some of the ranches black sheep are used as counters. Each one represents a bunch of sheep, and if one is missing it is known that a bunch is short.

Select ewes that are squarely built, deep in the body, and well woolled on the belly. Examine their mouths, and do not buy one that is broken mouthed—that is to say, with teeth gone or worn down to the gums. Two broad teeth in the center indicate two years of age; four broad teeth, three years of age; six broad teeth, four years of age; and none ought to be bought older than this. Three year old sheep are the best.

## IN MONTANA.

The Effect of Free Trade Talk on Sheep Industry.

EDITOR AMERICAN FARMER: About one year ago I wrote a description of Montana and her resources, and said this was a good place to come to engage in business. But now how changed it is! Everything is dead; one of our leading industries, silver mining, is shut down, thousands of laborers are idle, and a cold Winter is upon us. We are in a deplorable condition, and now Congress is knocking away to kill one more of our industries by a free wool bill.

Wool growing is our second industry in this State, and the seventh in the United States, and the agitation of free wool has depreciated our sheep from \$3.50 to \$1.50 per head, and our wool from 17 cents in 1892, to 7 and 9 cents in 1893, virtually driving hundreds out of the business, and hundreds of thousands of sheep to the slaughter pens. Free wool will destroy the wool and sheep industry of America to give South America and Australia a better market in America. Now is this an American spirit? If so, God deliver us from America and drive us away to Australia among the bushmen, and to South America, to dwell among the greasers and Indians. Our wool growers are in a deplorably sad condition. Many are being closed out by the banks, and many are shipping their entire flocks to be slaughtered. In this cold and rigorous climate we cannot grow wool on a free wool basis and compete with warmer climates and cheap labor. If we get free wool, the outlay in money to secure sheep ranches, sheds, housing, hay and high price labor will drive three-fourths of the wool growers of Montana to the wall.

One year ago Montana had 3,000,000 sheep, and they were in good demand at \$3.50 per head; now they have declined to \$1.50, thereby a loss to this State of \$6,000,000, caused by the agitation of free wool. Our wool clip for 1892 was 18,000,000 pounds, and we got an average of 17 cents per pound, bringing for Montana wool, \$3,060,000. This year our wool is selling for 7 and 9 cents net, losing to this State \$1,530,000 on decline of wool.

We in the West are helpless in the lower house of Congress, as the East and New England has the population; hence a large majority in Congress, so they will protect manufacturers of woolen goods by cutting off our heads to get free raw material. Such a discrimination is just before God or man, and our only hope is that our United States Senate will be Americans and not cater to the whims of the Administration and turn our industries over to foreign countries. We have strong faith that our Senators will fully investigate all our industries before they throw down all our protective laws and turn our industries out in the cold, to let our labor go tramping from door to door begging for a morsel to eat.—T. J. Frost, Lewiston, Mont.

## TEXAS SHEEP.

They Furnish the Best of Wool and Mutton.

EDITOR AMERICAN FARMER: Texas is immense. Think of it! She is larger than the six New England and the four Middle States, with Maryland and the two Virginias combined. She now stands seventh in the United States in population, being 4,000,000, and fourth in number of miles of railway. Her population is increasing at the rate of 200,000 a year.

Dallas, the metropolis of the State, has 60,000 inhabitants. The State has the great sheep range of the great Southwest. She has beautiful prairies for her sheep to run on all covered with the richest and finest of grass, fenced with barb wire.

The sheep of Texas are of the best of breeds, and grow the finest of wool. The Merinos, Shropshires, Cotswold, Oxford, Southdowns, and other breeds all do well in the great Lone Star State. The wool is of a most beautiful white, and classes in the great markets as of the best quality. The sheep or mutton are of the best quality, and are in demand in all the great markets. Those that follow the business of sheep raising take much pains in the care of their sheep. Texas wools always wear well. Combings begin very early in February and ends the last of April.

You see fine, fat sheep as you ride through Texas from Red River to the Rio Grande, and from there to the coast.—W. L. Moore, Pilot Point, Tex.

## He Means Business.

EDITOR AMERICAN FARMER: I write you this because I am engaged in the sheep industry, which is being ruined by the free trade system, and our living, if that plan is carried out, must go. I am only expressing the sentiments of hundreds and thousands of others engaged in the same industry, and we will, as a body, spot the man who dares to trifle with the farmer's living and who kills or leaves unprotected the home industry. How can a body of men who are doing all they can to injure us expect our support? Do not deceive yourselves, Senators and Congressmen. Our rights are not to be trifled with; we will remember you at the ballot box.—CHAS. WETMORE, Cornwallville, N. Y.

## Lincoln Sheep.

EDITOR AMERICAN FARMER: The trade in Lincolns has been brisk, notwithstanding the dull times. I have priced Lincolns in Ohio, Indiana, Iowa, Minnesota, Illinois, Nebraska, New York, and last week priced them in Union County, Oregon. I can supply ewes bred to a limited extent, but my rams are nearly all sold.—H. A. DANIELS, Elva, Mich.

## Sheep Breeders' Reunion.

The third annual meeting of the Cheviot Sheep Breeders' Association of the United States and Canada met in Cooperstown, N. Y., last week. The meeting was called to order by the President, Henry Van Dresser, Secretary Keim, of Indiana, was present. Ex-Senator Andrew Davidson delivered an address of welcome, in which he said that next to the improvement of man in his social, mental, and moral condition came the improvement and betterment of the stock of the country, and that it seemed especially incumbent upon the sheep breeder and wool grower of to-day, in view of the Wilson Tariff Bill, to make one sheep produce as much as two have done heretofore. He did not wonder that an advocate of this measure could not look a sheep in the face, and a sheep raiser who supports the measure is an anomaly. He urged them to stand together; to cling to that which promotes prosperity and personal happiness, and not to hesitate to discard that which was harmful.

There was a fine exhibition of rams and ewes from the flocks of Oregon County's noted breeders, Columbian Exposition prize takers, and some newly imported ones from the Cheviot Hills of Scotland.

## They Protest.

The American Sheep Breeders of Chicago are circulating a petition among the wool growers of the United States, protesting against the passage of a free wool measure. The sheepmen propose to voice their remonstrance against free wool by a monster petition signed by 500,000 wool growers.

## RECENT TRANSFERS

Of Pure-bred Stock, American South-down Record.

Jackson Ewe (5A) 5618—John Jackson & Sons, Abingdon, Ontario, Canada, to T. W. Smith, Glasgow, Ontario, Canada.

Corbet 5682—H. A. S. Hamilton, Fisherville, Va., to E. T. Robinson, Jr., Fancy Hills, Va.

Henthorn (433) 6207—Wm. Henthorn, Sylvan, Wis., to A. J. Cunningham, Woodstock, Wis.

Dick 6195—Wm. Henthorn to J. G. Miller, Mill Creek, Wis.

Prince Webb 6236—J. H. Potts & Son, Jacksonville, Ill., to J. Brown, White Pigeon, Mich.

Stagh 3320—F. J. Tompkins, Girard, Mich., to Marion Postick, Williams, Mich.

Jonas Ewe (15A) 2936 and Jackson Ewe (29A) 6223—John Jackson & Sons, Abingdon, Ontario, Canada, to Archie McGlashan, North Pelham, Ontario, Canada.

Jackson Ewe (46A) 6224—John Jackson & Sons, to E. Jeffs & Son, Bond Head, Ontario, Canada.

Sally M. 6089 and Belle 6090—E. S. Moorhead, Williamsburg, O., to H. H. Redkey, Sugar Tree Ridge, O.

Ontario 6219 and Dale Ewe (33) 6218—D. H. Dale, Glendale, Ontario, Canada, to A. Telfer & Sons, Paris, Ontario, Canada.

Shaw Ewe (13) 6077, Shaw Ewe (15) 6076, and Camorae 3058—C. C. Shaw & Son, Newark, O., to Bellevue Farm Co., Cranberry, N. C.

Wendling 6240—T. M. Hutchinson, New Wilmington, Pa., to W. D. McBride, Lowellville, O.

Little Cambridgeshire 5979—T. B. Bennington, Gratton, O., to R. M. Fisher, Danville, Ky.

Jennie 6253 and Dick Turpin 6254—Windle Johnson, Rosedale, Ontario, Canada, to A. Simonton & Sons, Blackheath, Ontario, Canada.—JOHN G. SPRINGER, Secretary, Springfield, Ill.

## A WATCH, A CHAIN, A PAPER, \$1.65.

The Best Premium Offer Ever Made to the American Public.

NO TOY, NO HUMBUG, NO CATCH.

Only an Honest Watch and a Great Newspaper for Every Farmer for Less

Money than he Can Secure them Anywhere Else.



## DESCRIPTION OF THE WATCH:

This watch is a timepiece guaranteed to run with accuracy. It need only be wound once every 24 hours. No key has to be carried, but it winds and sets by a patent attachment. The face, therefore, need not be opened to set it. It is suitable to carry in the pocket or to hang upon the wall in bedroom or parlor. To save space, the cut is slightly reduced in size, the face of the watch being one and seven-eighths of an inch in diameter and fifteen-sixteenths of an inch thick. It is no heavier than an ordinary silver watch, and but a trifle thicker. It has a strong, quick beat, and runs in any position, either at a standstill or in motion, and is not affected by heat or cold. It is open-faced, with a heavy glass crystal. The case is polished and lacquered to resemble gold. This material is frequently advertised as vermeil or fire gilt. The chain is not shown in the cut. It sells at retail in the country from 15 to 25 cents. A small charm also goes with the chain.

Remember that THE AMERICAN FARMER comes twice a month at the regular price, when taken alone, is fifty cents a year. We send, postpaid, the watch, the chain, and the paper for an entire year for only one dollar and sixty-five cents. In order to demonstrate our entire confidence in our proposition, we guarantee the delivery of the watch in good running order. The watch and chain will be sent, postage prepaid, to anyone who will send in a club of six yearly subscribers at 50 cents each, and only 10 cents additional money to pay cost of postage and wrapping.

bring out all the facts; there should be no guess work or hope about it.

If a merchant invests a portion of his capital in any description of goods, he will know when these goods are disposed of whether he has gained or lost by the operation. If the speculation has been unsuccessful, he will seek some other investment for his capital. To be a successful farmer it requires as much shrewdness as that of a merchant of any other pursuit in life. Now, brother farmers, allow me here to be a little critical. You will acknowledge that there is no manure that you can buy that will give such satisfactory results as the manure made in your own barnyards. It will always bring the answer, wet season or dry season, is not this so? Yes, then why do you not make more of it, or why do you not take better care of what you do make?

I have seen some of your manure heaps leveled out to a feather edge, which edges should have been shoveled up into a compact heap, so as to expose as small a surface as possible to rain and sunshine. These remarks will apply as well to your milking and feeding yards as to the main manure heap. Collect all the vegetable matter from every nook and corner of the farm that your stock will not eat, and incorporate it with the manure heap or with swamp mud, lime, and gypsum; form a compost heap, collect leaves from the woods which contain more potash than any of the phosphates in the market. Fork over this compost heap once or twice in the course of a year, and top dress your grass land with it. Leave a strip across the field not so top dressed, and if "book farming" will not satisfy you, you will begin to learn by example.

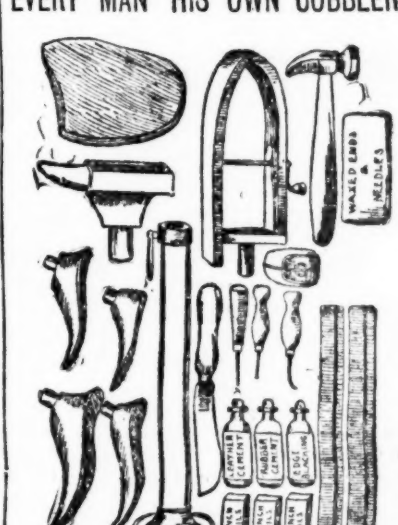
To do this work will require labor, and labor costs money; labor is always worth money when well directed and properly applied. By pursuing this course you accomplish two purposes—you improve the appearance as well as enrich the farm. I would direct attention, first, to making and saving all the manure that can be made, by collecting and applying to the manure or compost heap every year vegetation that grows on the farm; this, you will soon find, will pay. Then buy as much of the fertilizers as may prove themselves to be profitable by the tests above named. The introduction of so much labor saving machinery into the farming system is, I fear, making our farmers a little lazy, and they would rather take a hundred dollars out of their pockets to buy fertilizers than do the extra work of collecting the material and making compost, as they consider this a little out of the regular routine of farming; but they may as well hire labor to do this and secure the profit to themselves as to send their money abroad and give the profits to others. This, too, will keep the laboring men in their own neighborhood; a class that ought to be encouraged by constant and well paid employment, productive labor being the foundation of National success.

Plowing down red clover is one of the cheapest and quickest methods of improving farm land. This plan cannot be too often nor too strongly urged on the farming community. I have tried and seen it tried by others often, and always with success. The best time to do this is when in full bloom. Not only the green crop plowed under, but the roots enrich and mellow the soil, putting it in good condition for the reception of any crop.—D. W. T., Homeworth, O.

Saxby's Query to Ingersoll. This beautiful song (words and music, regular sheet music size) will be mailed to anyone enclosing 5 cents in stamps to D. G. Edwards, General Passenger Agent, C. H. & D. R. R., Cincinnati, Ohio.

Clover that has been sown with grain should not be used as a pasture the first season.

## EVERY MAN HIS OWN COBBLER.



We offer below a set of tools the want of which costs our people more than almost any other.

## READ THE LIST:

- 1 Cast iron base and screw.
- 1 Inch steel gas pipe standard.
- 1 Wrench.
- 1 Clamp to fit on standard.
- 2 Saw blades.
- 4 Iron bats, heels combined, to fit any boot or shoe.
- 1 Cast iron anvil.
- 1 Shoe hammer.
- 1 Shoe knife.
- 1 Peggingawl handle.
- 2 Sewing and handles.
- 2 Sewing awls.
- 1 Peggingawl.
- 1 Paper iron clinching nails, 3-8.
- 1 Paper " " 4-8.
- 1 Paper " " 5-8.
- 1 Paper " " 6-8.
- 1 Bottle rubber cement.
- 1 Bottle leather cement.
- 1 Bottle edge blocking.
- 1 Ball of wax.
- 1 Ball shoe thread.
- 4 Paper patterns for cutting soles.
- 1 Wax end.
- 2 Needles.
- 2 Bristles for wax ends.

Thirty-seven articles packed neatly in a box, weighing 32 pounds, and actually worth \$10 to any farmer and his family, and will certainly save him twice \$10 in money, time, and labor every year.

Every farmer has felt the need of this set of tools. You can repair your boots and shoes, half-soles them, etc., mend your rubber boots, repair your harness, do all kinds of riveting, etc.

We send the entire outfit, weighing 32 pounds, by freight for \$1.57. Or sent free for a club of 18 subscribers.

## Farm and Church Bells.



## Crystal Metal Farm Bells.

A Household Companion to Wife and Children. BUY ONE.





## A CORRECTED MISTAKE:

JOHN RALEIGH came down the steps of his great brown-stone mansion one dull, gloomy evening and turned listlessly in the direction of the nearest park. He wanted to get away to himself, and be as much alone as he could be in the heart of that great city; he, so well known in his own particular corner of the world.

Author, scholar, scientist, was John Raleigh; a man whose name was already set in diamonds among the savants. His researches, geological and otherwise, were among the most valuable and successful of the 19th century, and he was great and famous. Of course, he was old; for seldom, if ever, does fame encircle the brow of the scholar with her laurel wreath until age has dimmed the eyesight and silvered the hair.

Old, and alone in the world. Without wife or child, or ties of home; although he called that grand stone mansion by the dear loved name, it was unsatisfactory to the lonely heart of the scholar as the French word "maison," which in that language is the only term for home.

All day long John Raleigh worked at his desk, and when night came he sometimes went to his club, or perhaps entertained a few bachelor friends. But one by one his circle of friends had dropped away, and he found that he had few left whose society was congenial. Of course, the great world of fashion was open for him to enter; hundreds of sumptuous dwellings whose inmates would have welcomed him gladly; but he shrank from contact with the world of society, and went on in his lonely life. Like many others who—

"But on their torn hearts from breaking. There was no weeping, and their brows from frowning. And follow the long pathway all alone."

This evening as he sauntered along, a tall, thin form, somewhat stooped in the shoulders—that stoop which nothing but daily work at a desk will ever produce—his gray head bent, he was followed by admiring glances, for his wealth and learning and high position rendered him an object of interest. But John Raleigh never observed or cared for the adulation of the world's people. My story will prove how unworshiped at heart he was always, and the world only sneered at his fanaticism.

He entered the park and made his way to a secluded corner. He had scarcely seated himself upon a bench beneath a giant tree—a favorite resort—when the sound of a shrill voice, high-pitched and piercing, fell upon his ears; one of those uncomfortable voices which rasp one's nerves and make a sensitive person tremble.

He turned swiftly, and saw a young woman stylishly dressed, accompanied by two little girls, arrayed in the height of fashion. In the background a tall, statuesque figure; a girl who looked like a marble Juno. A pale, colorless face, with great calm, gray eyes, full now of a haughty light; her small head wore its crown of gold-brown hair with regal grace beneath its old-fashioned dress hat. She was plainly, even poorly, dressed, but she looked like an exiled princess, as she stood pale and silent, a book in one small ungloved hand.



HE LOOKED LIKE AN EXILED PRINCESS.

"I've borne your impertinence just as long as I shall!" stormed the other woman coarsely, ignoring the fact that they were in a public place. "You are good for nothing, Grace Forester! Here I have had you for a nursery governess six whole months, and you have done nothing but get the children into trouble. Just think of it! While you stopped to read that trumpery book in your hand my two little angels were nearly run over. Come, Flossie! Come, Dora! We'll go home! As for you, Miss Grace Forester, you may go where you please! You shall never darken my doors again, only to take away your trunk. You are untrustworthy!"

"But, Mrs. Greene," the statuesque face beginning to wear a look of terror, "I am a stranger in this great city. Surely you will not turn me adrift to starve? I know no one—absolutely no

one. You found me in my quiet country home, and brought me with you to take care of your children. Since then, the friends I lived with in the country have moved I know not where. I am an orphan, without a living relative; if you turn me out among strangers, where shall I go? What shall I do?"

"It matters little to me," returned the heartless woman, coldly. "Go to an intelligence office and apply for a position as servant. No doubt you will find work somewhere. As for me, I've made up my mind. You are not to be trusted; and, besides, my brother has fallen in love with you, and I will not have my family disgraced by his marrying you. 'Stop! Not another word!' Oh, the haughty look that swept over the pure white face. 'I most respectfully decline the honor of relationship with an ill-bred person like you, Mrs. Greene. I did you good evening! I am alone, but God will not forsake me!' And, trembling perceptibly, she walked away.

John Raleigh had sat listening intently to the entire conversation; as the girl turned away, moved by an uncontrollable impulse, he arose and followed her. In a retired corner he addressed her.

"I beg your pardon," he began, awkwardly; "but I was a listener to your



THE OLD MAN STOOD AND LISTENED TO THE OLD, OLD STORY.

interview with that woman back there. Pardon me for addressing you; I am an old man, you are but a child. Let me help you! You must not go into the world alone—a young creature like you."

She stood gazing up into his kindly old face, her eyes full of tears.

"You are very good, sir," she returned. "I am homeless now. My father was Richard Forester, a merchant in Albany. He died insolvent two years ago, and I was alone and a beggar."

"Richard Forester! Why, I knew him well! He was an old friend of mine. I am John Raleigh."

The swift color leaped into her pale cheeks; she held up the book in her hand, and he saw with a slight start of surprise that it was one of his own books. For the first time in his life he felt a thrill of gratification over his own success.

"Yes, I am that John Raleigh," he observed. "Thank you, my dear, for taking an interest in my work. But your love of reading has caused you to be made homeless. Now, Miss Forester, I want you to go home with me. My old housekeeper will take care of you for the night. In the morning"—he stopped short, and his kindly old eyes studied the fair, drooping face before him with an intent gaze—"we shall see!"

She went with him as obediently as a child. It was impossible to doubt or distrust John Raleigh. To look into his kindly eyes was to believe, honor, reverence him.

The next morning he astonished Grace Forester by asking her to become his wife. Of course, there was no question of her loving him. She was grateful to him for his kindness; he was old and lonely; she consented. In a few hours the words were spoken which made John Raleigh her lawful guardian.

Time passed. The world, at first full of a nine days' wonder over the strange and unexpected marriage, gradually accepted the situation, and the speculation and comment and criticism died out.

Mrs. Raleigh was an ideal hostess, and held her own in society. She was a passionate lover of music; a finished musician. Beneath the light touch of her white fingers the grand piano became a living, sentient thing, waiting forth its sorrows in touching tones. But the violin was her favorite instrument, and it grew at last to be the only real happiness of her life—its companionship. That was why, when the first met Harold Everett, the famous violinist, young and wonderfully fascinating, she felt that at last she had found a congenial companion, another self. It came to pass that after a time they were constantly together, and at last lived and breathed for each other alone. Poor Grace! she did not realize the path that her feet were treading, it was so covered with flowers that she could not suspect that it would end in destruction. And then at last the end came.

One night, coming into the music room

unexpectedly, John Raleigh found his wife in Harold Everett's arms, while he breathed forth wild words of love and passion, and bitterly lamented the fate that kept them apart.

The old man stood and listened to the old, old story. He saw that the young man had spoken without premeditation; that no deliberate wrong was intended. He saw, too, with a cruel ache at his kindly heart, that Grace, standing downcast and silent, had no strength, no power to repulse him; and in her silence John Raleigh read his own doom.

With his bowed form trembling like an aspen, he turned away and they did not suspect his presence.

The next day he sought his wife, and in a few kind words told her of the scene that he had witnessed. She fell upon the floor at his feet, weeping and praying for forgiveness. He lifted her and stood gazing into her eyes. This grand soul was striving bitterly, fighting a hard battle, trying to crucify self. It was over; he had won the battle. Surely never did living man more fully deserve the victor's crown.

"My dear," he said, in his kindly voice. "I see the mistake that I made in asking you to be my wife. It was wrong—absolutely. Grace, I shall apply for a divorce, and set you free to marry Harold Everett. He is good and true, a better mate for you than I. Do not oppose me, I shall find some plea—some cause which the law will accept and free you, yet the world shall never blame you."

A fanatic? Perhaps so, but who shall say that John Raleigh was not a martyr, uncrowned, unknown? To make her happy, and to undo the wrong of which his ultra sensitive heart accused him—the mistake of having made this fair young creature his wife—he was content to sacrifice himself forever. For it was only by blackening his own fair fame that he would be enabled to pro-



THE OLD MAN STOOD AND LISTENED TO THE OLD, OLD STORY.

vide a divorce from the wife who had never loved him, and who had learned to love another.

But he was spared this last stupendous sacrifice and humiliation. Going to his study one day, shortly after the conversation with her husband which had revealed his grandeur of character, Grace found him with his white head resting upon his open desk—stone dead. Disease of the heart, the physicians said, and his death had been swift and sudden. His will (executed since he had discovered the love which had sprung up between his wife and the violinist) left everything to her. Eighteen months later Grace became Harold Everett's wife. And John Raleigh sleeps in his forgotten grave, whose green sod covers one of the noblest hearts that ever beat. —New York Weekly.

From Mississippi.

EDITOR AMERICAN FARMER: I moved my family here in July, 1887, and we have lived here all the time since. I lived for 17 years before coming here in southern Kansas, in the best part of that State.

I am well pleased with the climate and natural resources of the country. I find the lands in bad condition from the system of husbandry that has prevailed for 30 years past.

One chief reason that induced me to come here was that it is a good grass country, and six years' experience has only increased my faith in the country in this respect. Stock of all kinds do well, and when the land is well seeded to our winter growing plants will be able to graze for 10 months at least. I have had plenty of grass by April 1 every year and a liberal supply through to March.

I grow two crops of Irish potatoes per year, from 100 to 150 bushels each crop, and have grown as high as 200 bushels per second crop, maturing early in November. I have grown as good corn this year as I ever grew in Kansas, but here I give less attention to corn than I did there.

I find a good class of white people here and have made friends as rapidly as in any place I ever lived. The people here have very tolerant in politics but are rapidly getting over that, yet need a few more lessons.

The colored population is quite numerous, but getting less and less every year because they do not readily engage in anything but cotton growing, and that industry has not been remunerative for several years past.

I came South to stay, and have not seen the day that I wanted for a moment to live in the North again.—ALBERT SEAVEY, West Point, Miss.

Soils that are formed from sediments, the settlements in water, are called alluvial; those that are formed from the decomposition of vegetables, minerals, the various rock formations of our uplands, are called colluvial.

## THE APIARY.

### Humblings.

After choosing a place for the bee stands do not change it.

Italians produce a larger number of bees than blacks, and so, indirectly, more honey.

To leave the bees a reasonable supply of honey for the winter is better than attempting to feed them.

It pays to keep the best stock of bees, as well as other good stock on the farm, and by careful selection great improvement is possible.

The moth miller is a much to be dreaded enemy of the bees, but if the stock is kept strong they will not allow it to deposit its eggs on the comb.

If a colony becomes queenless and it is not desired to unite it with another, give it a frame of brood from another colony containing brood in its first stages.

There seems to be no limit to the study of bees. By the use of an observatory hive everything that goes on inside can be seen and something new learned every day.

The honey of the Malta bees is noted for its purity and delicious flavor. This is due to the extensive crop of sulla (clover), from which the bees extract most of their honey.

When the bees are building comb or raising brood they must have water, which should be placed in shallow troughs with floats, that they may not drown. If located near a small body of water, that will be sufficient.

Darwin relates instances where black bees were crossed by the Ligurian bees at a distance of from one to three and a half miles, the Ligurians being the only ones in that region. Thus it will be seen that inbreeding is not necessarily a matter of course.

Mrs. Atchley has thought of an excellent way to haul bees. She has a wire cloth house on a wagon, and puts in it box hives of bees upside down without shutting the bees in the hives at all. After a drive of many miles but few were found flying about in the wire house.

More bees are lost by wintering than by disease or any other trouble. Each stock should contain sufficient honey and bee bread. When wintered out of doors each hive needs from 30 to 35 pounds of honey, and indoors 5 to 10 pounds less. An upward ventilation is an absolute necessity.

### Germans and Italians.

Wherever civilized man has made his home, bees have been introduced. The Italian and German are the two races which have been domesticated, and the species *Apis Mellifica*, to which they belong, was not native to the American continent. Though the German race is most widely distributed, it is not more ancient than the Italian, according to Aristotle and Virgil. The reason the Germans are more numerous is supposed to be due to the energy and migration of the people of northern Europe.



Prof. Cook says: "I have found by repeated experiments that the tongue of the black worker is shorter than that of the Italian worker, and generally less hairy." So it follows that the Italian is a better honey gatherer because it has better equipments. Italian bees may be distinguished by their three yellow bands. Every bee will have these if the colony be pure. The queen will often have the entire base of her body yellow. The workers always wear the three golden bands, and the drones vary, sometimes being strongly marked and sometimes indistinctly. The underside of their bodies is usually yellow.

### Drone Cells for Queen Cells.

EDITOR AMERICAN FARMER: I see some are beginning to use drone cells for queen cell cups, and I will now give my objections. While they are no better, if as good, as a Doolittle cell cup, to raise a queen in, they are too frail, too tender, to be handled rapidly, as a mashed queen cell will likely furnish a maimed queen; and a person only wishing a few cells can afford to take plenty of time to handle them carefully. But give me a strong and hard cell dipped thick enough to be handled like a marble, if necessary, and let that be all; and then think of pressing a drone cell cup hard up against a comb in a hurry. When I wish to raise queens by the thousands I want a wax cell. We have experimented along the line pretty thoroughly, and we have settled down upon the Doolittle cell cups, using no Royal jelly, but remove the cocoons, together with the little larva, and place them right into the bottom of the cell cup, and I tell you, large, and well developed queens are the result.—JENNIE ATCHLEY.

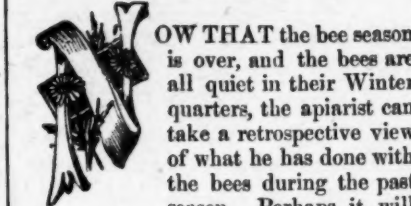
### A Good Showing.

EDITOR AMERICAN FARMER: Last Spring I had four swarms, three good and one very poor. From the three good swarms I took 300 pounds of very nice clover honey in sections, nearly all made from alisk clover which I sowed on purpose for my bees. I mixed one pound of alisk seed with timothy and red clover to each acre to be seeded. No honey from basswood this year, and very little from buckwheat. My bees increased to seven good swarms, by dividing the number of swarms issued.—E. O. LOUKES, Freeland, Mich.

We propose to give away 100,000 watches as fast as our friends want them.

## INCIDENTS OF THE SEASON.

What the Bees Have Done—When Honey is Ripened.



OW THAT the bee season is over, and the bees are all quiet in their winter quarters, the apiarist can take a retrospective view of what he has done with the bees during the past season. Perhaps it will recall disappointment felt at the failures made, perhaps joy at the successes attained; but in any event it can and should be done with profit to the apiarist.

As I look back I can see where I have made some failures the past season. But before I tell what they were, I think best to state that the season was peculiar in more ways than one. I began setting my bees out of the cellar on the 27th of March, which proved too early. On the 9th day of April I set out more, but still too early. On the 11th day of April I set out the remainder, which was the larger part of my apiary, and I must say that I think this was too early for this season.

Those first set out were in chaff hives, well packed, and they had very few dead bees on the bottom boards. They best resisted the Spring dwindling and were my best colonies all Summer. Those set out on the 11th day of April were in single walled hives. No sooner did they feel the cold winds and rains of April and May than they began to dwindle, and they kept it up until June. The way good colonies in single walled hives dwindled was startling. With the best care that I could give them I only saved the queens in about one-half of my apiary. Not until April 24 did they begin to gather pollen, although they had some brood when set out of the cellar. The only conclusion that I could get from the above facts was that Spring protection is absolutely necessary; that the date of setting out has but little to do with the result if the hives are protected from the frequent, sudden, and great changes of weather which occur here in central Vermont.

The flowers commenced to secrete nectar about the middle of June, but the bees were in poor shape to gather it. A part of my bees were moved five miles to better pasture and prepared for extracted honey. The nuclei and a few others were left at home; the nuclei for repairs, and the others to work for comb honey. Now for results. Those that were moved averaged about 20 pounds of extracted honey; the nuclei were all Summer building up. Of the three good colonies at home, two were run for comb honey and made a total of six pounds between them, while the third one, the weakest of the three, made 25 pounds of extracted honey.

The honey season was short and very poor with me, ending by July 10. I have now been in the bee business nine years, and have experimented for six years in regard to working for comb and extracted honey. Each year's experience has brought me nearer a decision, and I am now fully decided. Take the seasons as they average, and I can here in Vermont afford to work my bees for comb honey no longer at the present prices of the two kinds. In a series of years I get twice as many pounds of extracted honey as I can of comb honey at far less cost.

And right here I wish to say that I do not find it necessary or advisable to allow the honey to be entirely capped before extracting. I do not extract often more than once in 10 days, and try to do it when the combs are about two-thirds sealed. I never judge entirely by the capping. If the combs have been filled in the hive for 10 days the honey will be ripened enough to extract, if it is not capped at all. After extracting I put the honey in 50-pound tin cans, tie a cloth over the top and set in a dry room. I never yet had any honey sour that was treated in this way. The idea that honey needs to remain in the hives more than 10 days after being gathered, or that it must be capped before extracting, is wrong, to my best judgment and belief. I do not say that some honey(?) just gathered is fit to be extracted. I have frequently handled frames of newly gathered honey in the afternoon of a hot day and been bothered by the honey's running, yet these same frames containing the same honey could be handled in 24 hours, providing that they had remained covered with bees and no new honey had been placed in them, with perfect freedom and the honey would not run. If a person should take frames entirely capped that had been in the hive for a month, and extract some day when the mercury was at 90° in the shade, the chances are that his honey would be thin; but no one would dare to say that it was not ripened, if they knew the facts as above stated. Heat will make honey thin; cold will make honey thick. Shall we say that the thickness or not is ripe? I think 24 hours in a hive full of bees will ripen honey better than 10 days in a tub outside would; yet I think 10 days in a hive full of bees will ripen any honey that was ever gathered that was fit to be capped honey.

The season broke off abruptly about July 15, and since then the bees have only been rearing brood for the Winter bees. They are all now safely in their Winter quarters in the cellar; protected by no sealed covers, but better, with burlap quilts and absorbents above them.—H. W. SCOTT, Barre, Vt.

### Well Pleased With the Paper.

EDITOR AMERICAN FARMER: I am very well pleased with your paper. I like the tone of its editorials very much. I am strongly in favor of protection to all American industries, especially the farmers. I have been a voter for 57 years, and have been a protectionist first, last, and all the time.—JOSEPH E. VAN HORN, McGinty, Pa.

## ZE GRAND SPECTACLE!

### Our Great Army of Readers

find themselves in about the same frame of mind as Baron St. Albe was. When they saw the "superbe" monument number issued by THE AMERICAN FARMER, and learned that thereby they could secure a series of 30 parts of 16 photographic views each, similar in style to the Supplement, and representing the famous "Sights and Scenes of the World," by cutting out the coupon attached for the same part and sending it to us together with

### Five Two-Cent Postage Stamps,

they were emphatic also in their expressions of the enterprise of THE AMERICAN FARMER, and rejoiced that so great an opportunity had been placed within their easy reach.

Already we have been complimented on the liberality of our offer, and have every assurance that it will be largely availed of.

The American Farmer Meant Just What It Said, and if any of our readers fail to secure the grandest collection of handsome and interesting views in the world it will be their misfortune and not our fault.

For the benefit of those who did not exactly catch our proposition as already explained, we repeat it again in this issue.

What The American Farmer Offers Its Readers.

Sights and Scenes of the World consisted of a magnificent collection of 320 photographic views, 10x12 in. size, of famous places in all parts of the world. With each view is a very interesting description, giving historical and other data, intended to convey a thorough understanding of the subject represented. These photographic views are bound in parts, there being twenty parts altogether, each one containing 16 views. These several parts may be obtained by our readers by sending to our office the coupon, such as may be found upon another page of this issue, together with five two-cent postage stamps, upon receipt of which the part called for will be mailed by us to the address given.

The coupon for Part 2 appears on page 4 of this issue. Cut coupon out and mail it to the Coupon Department, American Farmer, together with five two-cent stamps, for part 2. Write your name and address plainly on the coupon.

Keep a sharp lookout for the parts as they are called for by the coupons each issue, and be sure that your order is promptly sent in.

## A CHARMING PICTURE.



### TWO KIDS:

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This fine art reproduction is rich in coloring and of the highest workmanship. The attention to detail is simply wonderful.

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CUT OUT THIS COUPON AND SEND IT,

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and we will mail you a copy of

TWO KIDS.

### Sir Boyle Roche's Speeches.

In the Irish House of Commons in 1795, during a debate on the leather tax, the Chancellor of the Exchequer, Sir John Parnell, observed "that in the prosecution of the present war, every man ought to be ready to give his last guinea to protect the remainder." Mr. Vandeleur said that "however that might be, a tax on leather would press heavily on the barefooted peasantry of Ireland." To which Sir Boyle Roche replied that this could be easily removed by making the under leathers of wood. In speaking in favor of the Union, he said that one of its effects would be "that the barren hills would become fertile valleys." In another debate he said "I boldly answer in the affirmative—no." In mentioning the Cape, he said that "myrtles were so common there that they made birch brooms of them." I am not sure whether it was he who in one of his speeches said, "You should refrain from throwing open the floodgates of democracy lest you should pave the way for a general conflagration." He once mentioned some people who "were living from hand to mouth like the birds of the air." —Seventy Years of Irish Life.

### The Piedmont Region of the South—"The Best Country Under the Sun."

After the war a heavy emigration began to the West from all the Southern States, which continued several years. In later years, however, the movement has been reversed, and people are leaving the West and are settling in all parts of the South. The experience of those who have lived in both sections is that while the yield per acre is not so large in the South as in some parts of the West, per acre, yet the net profit for a series of years are quite as satisfactory and life far more comfortable, as the farmer does not have to contend with frequent and protracted drouths, destructive cyclones and caterpillars, and long, dreary, and severely cold winters. Taking into consideration the climate, especially that of the Piedmont region of Virginia, the Carolinas, Georgia, and Alabama, traversed by the Richmond & Danville Railroad system, with its advantages of good markets, cheap lands, pure water, and perfect school systems, unquestionably the "Best country under the sun," especially for the tiller of the soil, the manufacturer of cotton, woolen goods, and tobacco, is that situated between Washington, D. C., and Birmingham, Ala., along the eastern slope of the Blue Ridge Mountains, where all classes of citizens are prosperous and happy and a good livelihood can be had with minimum exertion. Outdoor work can be done every day in the year, and storms, destructive alike to life and property, are not feared as in other sections of the Union.

Map folders, showing time schedule and extent of Richmond & Danville system of roads, and circulars descriptive of land, climate, etc., can be had on application to the Passenger Department, Richmond & Danville Railroad, Washington, D. C.

### LADIES' SPECIAL COAT.



### HARD TIMES BARGAINS.

No. 1.—Here's a dandy little overcoat, made of Valen (Goswami), suitable for hard wear and good cold weather. In a large assortment of patterns, lined and unlined, finished, detachable capes, sized to 14 years, \$2.50. To be delivered by express, receiver paying charges.

No. 2.—Pretty gilet dress, made of all-wool flannel, lined with feather-stitch, lined, capes, ruffles front, bishop sleeves, well made and finished, lined throughout. Excellent wearing quality, suitable for school, street, and house wear. Can be had in navy blue, brown, or cardinal. Sizes from 4 to 14 years, \$2.75, postage prepaid. Delivery guaranteed.

No. 3.—Special Boys' Outfit, made of Union Cheviot, excellent quality. Winter weight, in blue, black, or brown. Best make and finish. We have arranged with one of the largest clothing houses in the country to supply our subscribers with this outfit, consisting of a double-breasted coat, two pairs short pants of the same material, and Harvard cap of Union Cheviot, with peak. These outfits are sold at retail for \$3.50, and are excellent value at that. Wanting to give our subscribers an opportunity to secure a bargain, we offer them at the wholesale price of \$2.50, postage prepaid. Sizes of suits are from 4 to 14 years; sizes of caps from 6 to 7. Delivery guaranteed. Don't fail to take advantage of this opportunity.



Established - - 1819.

75TH YEAR.

THE AMERICAN FARMER.

"O fortunatus nimium sua de bona norit agricola."—VIRG.

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TO ALL TO WHOM THIS PAPER

SHALL COME.

Greeting: This

paper is sent you

that you may

have an opportunity

to see it and examine it, with a

view to subscribing. We ask you to

compare its contents, objects, and price

with those of other papers, and see if you

do not come to the conclusion that you

ought to have it; that you cannot afford

to do without it. We can assure you

that if you send in your name for one

year that you will find it one of the most

profitable investments that you can make.

We hope to make and keep it so interesting

that you will think that every

number more than repays you for the

subscription price for a year. Please

call your neighbor's attention to the

paper.

OUR PORTFOLIO OF PICTURES.

We call the attention of our readers

to our advertisement on the third page,

of the views "Sights and Scenes of the

World." This issue will contain coupon

for Part 2, which can be had by cutting

the coupon out and sending it, with your

name and address and five two-cent

stamps, to the Coupon Department of

THE AMERICAN FARMER. Those who

have not ordered Part 1, coupon for

which appeared in our recent issue, can

secure it by cutting the coupon out and

sending it, together with 10 cents. None

should delay in sending in their orders,

so as to secure the complete set of 20

parts.

Remember, it costs but 10 cents each

part if the coupons are sent.

Any one wishing to secure any particular

part, which they have failed to

send coupon for, can have the same upon

the receipt of 25 cents. We trust that

our readers will take advantage of this

great offer, and secure all the parts as

they appear each issue.

Last year the tobacco growers of the

Connecticut Valley received \$6,000,000

for their crop. They believe that the

reductions proposed in the Wilson Bill

will mean the ruin of three-fourths of

them, and they are fighting the bill with

all the strength they can muster. They

rely on Representative Sperry, a Democrat,

to lead the fight for them in Congress,

and that gentleman has written them:

I seriously doubt whether the (Wilson)

Bill, as at present reported, will pass the

House, and I am in hopes of getting the

(tobacco) tax restored, as originally con-

tained in the McKinley law.

OUR CLUBBING LIST.

The American Farmer Will be Sent

in Connection With Any Other

Paper or Magazine.

We will send THE AMERICAN FARMER

and any other paper or magazine in the

country at a reduced rate for the

two. The following is a partial list of

the periodicals that we club with:

Name of Periodical. Regular Price. With the American Farmer.

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Worthington's Magazine. .50 .75

Babyland. .50 .75

The National Tribune. 1.00 1.25

American Gardening. 1.00 1.25

TO THE FARMERS

OF THE

UNITED STATES.

We are to-day facing a crisis the like

of which has never before happened in

the history of the country.

In every previous panic in our history

—and notably that of 1873—the farmers

have raised the country out of the Slough

of Despond by growing great crops, for

which they got good prices. A combination

of the plots of the politicians,

with adverse natural conditions, prevents

them rendering the country the same

great service to-day. Adverse natural

conditions reduced last year's crops be-

low the average. The plots of politicians

prevent the sale of what was raised

at fair prices. With actually less wheat

in the country than our people will need

for consumption before next harvest

time, the price is yet the lowest ever

known in the history of American

markets. With not half enough wool

in the country that is necessary to clothe

our people for the coming year, there is

yet no sale for the hundreds of millions

of pounds sheared from our flocks last

year. Millions of dollars' worth of tobacco,

which last year would have met

with a ready sale for cash, this year lies

unsought, unsold, and unsellable in the

warehouses and sheds, where it loses

weight and value and accumulates ex-

penses. Cotton is phenomenally low.

With but half a crop of rice the price is

down below the bottom. The same is

true of every other farm product—almost

without exception.

This condition of things greatly pro-

longs and aggravates the panic.

No matter with what sophistries the

politicians may attempt to delude the

public, one stern fact cannot be denied,

and that is: *There can be no revival of**prosperity until there is more money in**the pockets of the farmers.*

The return of prosperity must begin

with the farmers. It cannot begin with

any other class and extend to them.

One-half of our population depends

upon agriculture for their living, and

the other half depends upon them.

In the face of these overwhelming

facts, the iniquitous Wilson Bill has

struck a deadly blow at the interests of

every farmer in the country. Not content

with ruining the home market for

the great staples, it has carefully sought

out every secondary product upon which

farmers were making profits, and stripped

all chances of lucrative returns from

them. It has ruined the value of 350,-

000,000 pounds of wool and 45,000,000

sheep, which the farmers last year rejoiced

in as wealth. To-day not a pound of all

these millions of pounds of wool and all

these millions of sheep is salable except

at a ruinous sacrifice.

The value of every pound of rice,

tobacco, butter, cheese, sugar, every

bushel of barley, potatoes and fruit, every

ton of hay, hemp and flax, every dozen

of eggs, every crate of vegetables in the

whole country is to-day held in doubt

because of the threatened injuries of the

Wilson Bill. Nobody wants to buy

these things at any price, because he

cannot tell what the price will be after

the bill passes.

The whole business of the country is

paralyzed by fear of what is coming.

Every farmer in the country is suffer-

ing acutely from what is threatened, and

will suffer still more severely if the threat

is carried out.

The farmers have it in their hands to

defeat this iniquity and regain prosperity,

first for themselves, and then for the

country. Let them, without regard to

party, unite in a stern protest against the

wicked sacrifice of their interests con-

templated by the Wilson Bill. Let them

demand with united voice that the

schedule of agricultural products be left

untouched. Let every farming commu-

nity in the country be heard from in

vigorous protest.

The injustice of the bill to farmers is

so open and manifest that such a protest

cannot fail to be successful. The politi-

cians had hoped to hoodwink the farm-

ers in consenting to this outrage upon

them. Let them be made to understand

that the farmers are fully alive to their

interests, and will not be dumbly led to

slaughter to round out a politician's

bombast.

Let us have at once a storm of peti-

tions, letters, and remonstrances from

every individual farmer, every Grange,

every Alliance, every farmer organiza-

tion. Send them direct to Senators and

Representatives, or to THE AMERICAN

FARMER, which will see that they are

placed in the proper hands.

Brother farmers, do not delay acting.

Whatever is done must be done at once

to prevent the passage of the bill and the

robbery of the farmers.

COLD COMFORT FOR THE FARMERS.

The Philadelphia Times, one of the

loudest clamorers for Tariff Reform, is

frank enough to admit that the Wilson

Tariff is intended to cut down the profits

of our own farmers for the benefit of the

town people. It says editorially:

"There is no more fertile region in America,

nor upon the face of the globe, than the Can-

adian Province contiguous to the St. Law-

rence River and the ocean. They produce

wheat, rye, barley, oats, butter, apples,

horses, and cattle in great abundance and

superior quality. By placing these farm

products upon the free list the Committee on

Ways and Means will give to barren New

England those products which have hereto-

fore been largely brought from New York,

Pennsylvania, and the prairie States of the

Mississippi Valley. The Canadians can pro-

duce them all and sell them cheaper than the

products of our own country."

This is a frank admission by one of

the leading supporters of the bill of the

very viciousness for which we have de-

nounced it. It frankly avows that the

expected effect of the bill is to take away

a profitable market from our own farmers

—our own tax payers—and give it to

foreigners, who bear none of the burdens

of our Municipal, State, or General

Governments. Nothing can be more

outrageous to common sense than the

mere statement of such a thing. It is

impudent demagoguery—an attempt to

catch the workingman's vote by a sham

pretense of reducing the cost of his living

at the expense of those who give him his

living by buying the products of his

labor.

It is absolutely without an element

of justice. As we have repeatedly said,

the farmer owes the workingman—the

townsman generally—absolutely nothing.

The farmer has always given the towns-

man all the great staples of life—the

things which constitute the bulk of his

expenses—much cheaper than the towns-

men of Europe can buy them. The

price of bread and meat has always

been as much less than the same in

Europe as the cost of transporting the

same to Europe and selling them there.

For example, the price of red winter

wheat in London is 27 shillings a quarter

—equal to about 84½ cents a bushel.

The same is worth 60 cents a bushel in

Chicago, or 24½ cents cheaper to the

resident of Chicago than to the man in

London. That is, the Chicago man gets

his flour about \$1.50 a barrel cheaper

than the London man. There is the

same difference in the cost of meats, corn

and oats and hay for their horses, etc.

As a rule, fruits and vegetables have

been cheaper in the same ratio. Taken

all through the American workingman's

dollar will buy fully one-half more good,

wholesome food than will the English-

man's four shillings, the Frenchman's

five francs, or the German's four marks.

While thus taking the lowest prices

for his own products, the farmer has

been paying the workingman the high-

est prices for the products of his labor.

While giving the townsman a greater

variety of cheaper and better food than

any other townsman in the world has,

the American farmer has been content

to buy goods produced by the highest-

paid labor in the world.

Therefore, it is in the highest degree

unjust to the farmer to rob him of a

great portion of his profits under the

pretense of still further benefiting the

workingman. At best it is only a

miserable sham and pretense. Taken

through any period of years the Ameri-

can farmer will furnish fruits, vegetables,

and other minor products cheaper than

they can be imported from Canada or

elsewhere. Protection only assures him

a regular, stable market, which cannot

be broken down at critical times, and

which will encourage him to develop his

products.

Still more important: if the American

production of eggs, tobacco, poultry,

butter, cheese, and vegetables be de-

stroyed, where is there to be found a

market for the workingman's products? He

can



## PASTURES

## Some Experts' Ideas as to the Management and Development.

A RECENT meeting of the Bothwell Farmers' Society, in Scotland, Prof. A. N. McAlpin delivered an address on the management of pastures, which has attracted much attention. He said that the great thing to be aimed at in a good pasture was to have the land well filled with roots. They might work away as long as they liked, but until they mastered that problem they would never get a satisfactory pasture. The roots should also go as far down as ever they could get them. What was the use of a man paying for, say, 18 inches of soil and only using nine of them. Let them go as high as they liked with the leaves and blades, but let them also go down with the roots. The watchword of the successful pasture manager should be, up and down as far as ever they could get. As against the Highland Society, he had been through and examined many of the very best pastures in the country, and the thing that struck him more than any other thing was the depth of the roots of some of the finest pastures. The farmers simply would not believe him as to the depth to which many of their grasses would grow. Getting a good sward of grass was not the only consideration that weighed with them in having deep-rooted grasses. They had also to consider that when they had the soil well filled with deep-rooted grasses, they had ready to their hand a series of most valuable workers in the preparing and improving of the land. Cocksfoot was one of the deepest rooted of their grasses, and even although it had been worn next to nothing for feeding purposes, he would say put it in, for it would go down and make a splendid tiller of the soil.

## MEADOW FESCUE

was another very good deep-rooted grass, and so also was timothy; but in having these and other seeds, they should be sure that they got what they wanted, for in many cases the seeds were so like each other that, unless they were experts, they would hardly know the difference between them. The result of this was that the seedmen had a great temptation to make up their costlier seeds with considerable quantities of smaller-priced seeds, and pocket the difference. Of the bottom grasses, perennial ryegrass was one of the most valuable. For a mixture, Italian ryegrass might also be used to some extent; but it had to be handled with great care, for it was such a broad-leaved plant and such a quick feeder that if too much of it was sown it would come up before the other grasses had got a start and crush them quite out. The ideal pasture was one in which there was a judicious mixture of the deep and shallow-rooted plants. When they had that they got what was practically a perpetual motion in the soil—the one class of roots coming up as the other died out. Farmers did not take nearly the interest in their pastures that they ought. They would all insist on having the very best of cattle, horses, and sheep; but, in the matter of grasses, they trusted to Providence, or rather trusted in the seed merchant, who, of course, gave them what he liked. How would they like to trust for their dinner to some other man who did not know what their tastes or requirements were? No plant grew unless from seed, and unless they put the best seed in the land they could not expect to get the best possible crop. The grasses that they wanted in a pasture were the grasses that would feed animals. The grasses from which animals could extract nothing ought, of course, to be avoided, and in this connection they should guard against the hairy-leaved grasses, and also the excessively woody grasses. It was also important in

## THE SELECTION OF GRASSES

to go as much for flat in preference to round grasses as possible. The latter were liable to be greatly destroyed by the tread of the animal. Perennial ryegrass was one of the best examples of a flat grass. It would stand any amount of treading; indeed, treading seemed to do it more good than harm. Notwithstanding the opinion of many practical farmers, expressed to himself, he might say that all grasses took pretty much the same food materials, and in some what similar proportions. What was good for one was good for all. Clovers, however, wanted a diet different from grasses. Above everything else, clovers must have a compound of potash. Potash was the keynote of clover-growing, and where they had a soil with plenty of potash they had a good crop of clover. Grasses, on the other hand, wanted nitrogenous matter, and that was why grasses grew so well after turnips, the nitrogenous compounds which were left by the manure which had been applied to the turnips favoring them. Clovers also wanted a good supply of lime compounds—not that it fed on lime compounds, but that the compounds acted as an antidote to some of the noxious matters which the plant used in building up the substances in its body. One thing else very necessary for clovers was phosphates, and they need not be soluble. Clover had the power of dissolving the phosphates for itself, as was proved by the fact that it would grow on the face of railway cuttings, where they would hardly expect much soluble phosphate. There was no nitrogenous compounds there either before the clover started; but immediately it did so, it turned out these compounds and the grasses came in and took up the space. For the feeding of pasture grasses, therefore, they must use nitrogenous compounds. But the

compounds would not have to be too soluble, or the grass would get away too quick and choke the clover. The equal feeding of the whole of the plants comprising the pasture was the point to be aimed at, and this could only be done by applying the manures at different times and in stated quantities. In laying down a new pasture, part of the manure should be applied when the land was being prepared, and the remainder after the roots had got a start. In the latter case, however, they should be certain that it was applied before the bottom grasses had got so thick and close on the ground as to prevent the manure getting down to the deep-rooting plants. If the shallow-rooted plants picked up all the manure, the deep-rooters would, of course, suffer, and without these, as he had already said, they could never have been a really good and satisfactory pasture. In the manuring of their old pasture lands, the same thing held good; they must get the manuring down to the deeper rooted plants if they were to do any good. The close blanket cover so frequently formed by the surface grasses must be made penetrable to the manure, and this could either be done by making holes at regular intervals, or by burning out spaces by means of a dressing of quicklime.

## The Gulf Coast.

EDITOR AMERICAN FARMER: I live on the Gulf of Mexico, 85 miles east of New Orleans and 25 miles west of Mobile, on the Louisville & Nashville Railroad, which is the trunk line from Mobile to New Orleans, and takes the travel through from the Mobile & Ohio Railroad and around all the vast territory from Florida and New Orleans and the East to the South. We have the loveliest climate on the globe. We are entirely exempt from overflow, tornadoes, or cyclones, and they do not occur this near the Gulf, as all the overflow we have here for 10 miles back is tide water.

Our timber lands are fine in Alabama and Mississippi, and our land is very productive for the cereals and vegetables, and as a fruit country it has no equal. Our pears this year is a perfect crop. I know one orchard of 100 trees, LeConte pears, been planted 11 years, will yield 1,200 bushels. The pears, peaches, grapes, and figs are a perfect success.

We have no trouble in raising on our soil three or four crops on the same land in a year; we can, in a word, plow and plant every month in the year. When a crop should fail, all we have to do is to plow and plant again. For a grass country we have no equal in my knowledge. Our sheep live and do well here the year through, and we have the best wool growing in America as soon as we can get Northern men to come here to manage the industry. While people in the North are raising wool on land worth from \$50 to \$100 per acre, here our pastures are free in a great measure, at least, for the land can be purchased at from \$1 to \$5 for fruit growing and sheep ranches.

The country is fine for growing mules, which will be a fine industry as soon as it is found out. I lived here on this Gulf coast for eight years, and here we have the only perfect Summer and Winter health resort in America that I ever found. Take from Mobile to New Orleans, a distance of 145 miles, and for 20 miles back from the Gulf, and I am prepared to say that there is no health resort like it. I came here from the North eight years ago, not for my health, but my friends told me that I would not live six months. Well, I am in my 84th year, and I can say I have not missed one meal with sickness since I came here.—WM. SIKESON, Ocean Springs, Miss.

## West Point Cadets.

EDITOR AMERICAN FARMER: I long how do the Cadets at West Point have to stay? 2. What is required of them? 3. How are they appointed? 4. What are the qualifications necessary to secure an appointment? 5. What compensation do they receive? 6. When are they appointed, and in short, all about them?—READER, Whitesburg, Pa.

1. Four years.
2. To act like gentlemen, and attain a proficiency in military science.
3. One from each Congressional District, Territory, and the District of Columbia, and 10 at large. The first named are appointed by the Secretary of War on the recommendations of the Representatives or Delegates; the latter by the President at his discretion.
4. To be between the ages of 17 and 21, have perfectly sound bodies, and education sufficient to admit them to a college course.
5. They get \$500 a year and one ration, against which are charged board, clothing, books, stationery, etc.
6. The 10 at large are appointed each year. The others whenever there is a vacancy in the college from their District or Territory.—EDITOR AMERICAN FARMER.

## Scrofula

Is Disease Germs living in the Blood and feeding upon its Life. Overcome these germs with

## Scott's Emulsion

the Cream of Cod-liver Oil, and make your blood healthy, skin pure and system strong. Physicians, the world over, endorse it.

Don't be deceived by Substitutes!

Prepared by Scott & Brown, N. Y. All Druggists.

## RETROSPECT OF THE SEASON.

## The Plentiful Crops and Scarcity of Money Discussed.

THE END of this year's harvest in northeastern Ohio has come, and let us now invoice the year's results.

In 40 straight years of farming here I never saw a better season of farm crops. We had an excellent growing season; rain fell almost every week, and the hay crop was immense. It sells for ready cash at from \$9 to \$10 per ton, net price. Potatoes were never a better crop here; larger than usual and sound and healthy to the core, with no holes in the center of them this year. Forty-five cents per bushel is the market price in this city, and the main crop is nicely stored away in farmers' cellars waiting for the better price of \$1 per bushel, sure to come in March or April next.

From Detroit to Buffalo the first tier of Counties of the south shore of Lake Erie is largely devoted to grape-growing, small fruits, and horticulture of various kinds. The extraordinary yield of grapes this season far exceeded any former crop, and the just and honest law of supply and demand that farmers champion so strongly forced down the price to one cent per pound, all nicely put up in 10 to 20 pound baskets, and with such an abundant crop we all made money. Peaches were so plentiful that good, large, luscious peaches sold freely upon the trees in the orchards as low as 50 cents per bushel, while the poorer ones and windfalls as low as 25 cents per bushel; but the main crop when picked and nicely marketed in half-bushel baskets netted us from \$1 to \$1.50 per bushel.

Butter and cheese, our main staple crop of Ashtabula County, sell very readily at large prices—cheese at 11 cents wholesale, and butter 30 cents per pound retail. Farmers are king of the earth this year sure.

Our active and noble vote for the protection of American farm crops, as well as all our American industries, has been heard in Washington. Our six-foot-six member of Congress from this little city will blow the result still higher upon his return. The great masses of our voters and people are loyal to America, and will work hand in hand with THE AMERICAN FARMER for the upbuilding of our factories and mills of America, thereby creating a home market for every bushel or pound of crops we can raise. We honestly hope to soon feed and clothe ourselves, independent of this whole outside world.

The Administration kindly believes it came into power because of the tariff reform desire of our people, when the fact is not one voter in a thousand cared a cent for change in that direction; but the main and sole cause for this great revolt of our people was the 10 to 20 years' continuous money famine. Our mills and factories upon every side of me here have been unable to secure money for many past years to keep them in motion but a portion of the time each year. The shortage of money has caused idle men to murmur. It made them strike for higher wages or else continuous work.

The old Administration protection policy was perfection, but their contraction of the volume of money was wicked and unbearable. To-day 67,000,000 of our American people are trying to do the business of this country with less money than 33,000,000 population did in 1865 and 1866. It can't be done, and the Administration is yet to be born that can sit securely on the throne of Government of this great people that will not grant us both a sufficient volume of money and high protection of all our industries. We never had too much money in any period of our Government existence to injure or jeopardize the interests of our poor people and wage earners. Labor is happier under an abundant call for work even with pay in cheaper money. We need an elastic volume of money; one that can readily adapt itself to meet all demand. We need to break the power of money and put an end to all legislation that tends to make the rich richer and the poor poorer.

I am glad to see THE AMERICAN FARMER so deeply in sympathy with the causes that will secure for our country the above grand results. Give us equal protection on cotton, rice, wool, tea, sugar and all farm crops with all our manufacturing industries; and what is more, we, the people, are going to organize, educate ourselves, and vote for it, and have it, too, at the cost of the present public servants who are so willing to do all our voting and public policy work. Away with your proffered service; it is rotten to the core. The farmers' smile of northern Ohio is only one we see. Thousands of idle men are to-day begging for work. Our Ashtabula harbor, the most extensive iron and coal docks upon this continent, are to-day at a standstill—no money and no work; no food for their suffering families. Thousands of able-bodied men, women, and children are facing a cold and cheerless winter entirely destitute of the comforts of life or the chance to perform labor to save themselves from robbery and crime which may soon become the last resort.

To-day the most important farmer organization of this world is holding high ground over the situation in Syracuse, N. Y. Let us all hope and pray their deliberations may settle upon a wise and humane plan for the better guidance of our ship of State; and amidst bursting granaries and an overwhelming supply of harvest in 1893, let us have not only the hum of all human industry, but let us have peace and prosperity for the poor and middle classes, and let us forfeit all reverence for the golden gods, who neither toil nor spin, but lay in wait for our coming, to absorb the fruits of the entire labor of this earth.—HENRY TALCOTT.

## FARMER MEETINGS.

## State and Subordinate Granges, Institutes, etc.

## INDIANA.

The State Grange passed resolutions favoring free silver and the purchase by the Government of a line of railroad from the Atlantic to the Pacific, paying for the same in legal tender notes.

## INDIANA.

The following officers were elected: Master, Aaron Jones, South Bend; Overseer, Joel Davis, Columbus; Lecturer, T. J. S. Robinson, Cleveland; Steward, Hiram Henderson, Henderson; Secretary, J. H. Walker, Adams; Treasurer, W. H. Hesse, Ellettsburg; Executive Committee, T. H. Wallington, of Madison; John Tilton, of Franklin, and L. S. Fitch, of Oakwood.

## IOWA.

The Fine Stock Breeders' Association elected the following Secretary: Wm. McClung, Waterloo; Vice-Presidents, J. P. Manatry, Fairfield; Richard Baker, Jr., Farley; John Cornie, South Amana; W. B. Barney, Hampton; Prof. C. F. Curtis, Ames; W. W. Vaughn, Marion; H. D. Parsons, Newton; C. of the Grange, Cornin; F. R. Shaffer, Campbell; L. S. Coffin, Fort Dodge; J. A. Benson, Sanborn; Secretary and Treasurer, G. W. Franklin, Atlantic.

## MARYLAND.

The State Grange met in Baltimore Dec. 13, 14, and 15. Worthy Master H. M. Murray, Anne Arundel, presiding; Wm. B. Sands, of Baltimore, Secretary. About 60 subordinate Granges were represented. Master Murray's address criticized Secretary Morton sharply, and also the Wilson Bill. It urged special attention to State assessment and taxation, good roads, and special efforts to increase the membership of the Grange. The report of Treasurer Manly showed a balance on hand of \$300. There had been no increase or decrease in the membership.

A resolution was passed protesting against the suggested policy of the Secretary of Agriculture in stopping appropriations to its cultural experiment stations and the distribution of new and valuable seeds.

The officers elected and installed were: President, H. O. Devries, of Howard County; Secretary, H. J. Ager, of Prince George's County; Treasurer, James C. Robinson, of Anne Arundel County; Steward, C. Lyon Rogers, of Baltimore County; Assistant Steward, Thomas B. Todd, of Baltimore County; Chaplain, C. J. Burdette, of Montgomery County; Treasurer, N. P. Manly, of Cecil County; Secretary, Wm. B. Sands, of Baltimore; Gatekeeper, William E. Brown, of Montgomery County; Ceres, Mrs. H. O. Devries; Flora, Mrs. Samuel W. Reall; Pomona, Mrs. A. Washington Stevenson, and Lady Assistant Steward, Mrs. L. M. Corey.

## MASSACHUSETTS.

The 10th annual exhibition of the Eastern Middlesex Poultry Association was held at Malden, beginning Dec. 21. It was the best exhibition the association has ever given.

## MICHIGAN.

The Michigan State Grange held its 21st annual meeting at State House, Lansing, Dec. 13, 14, and 15, with Worthy Master Horton presiding. In his address he spoke of the lecture system which had been adopted at the last meeting of the State Grange had met with a great deal of success, but not quite so much as had been anticipated, owing to some misunderstanding as to methods and instructions. During the year 400 lectures had been delivered and over 200 lectures delivered, at an expense to the State Grange of about \$338. The taxes of the State were so badly adjusted that the farmers paid more than their share. The Grange should place itself on record as favoring the enactment of a law similar to the mortgage law of 1891. The Michigan Agricultural College should receive the support of all farmers. It is gratifying to note the establishment of a winter course in dairying. Farmers should not let opportunity pass to public resent the insult offered them by the present Secretary of Agriculture.

Mrs. Jennie Buell, Secretary, reported that there were 226 Granges in the State, with a membership of 11,000, a slight advance on that of one year ago.

Resolutions were adopted favoring a uniform system of text books, the co-operation of subordinate Granges with school commissioners, the visitation of schools, the appointment of standing committees to methods and extension of the reading course as adopted in Ocean County, and endorsed the farm home reading circle. Also favoring the free rural mail delivery, the enactment of a general law under which all cities and villages can incorporate, extending the benefits of the law to the election of United States Senators by direct vote of the people, and condemning the "unprovoked, malicious, disrespectful and false language of Secretary of Agriculture Morton," and endorsing the action of the National Grange on this subject.

Reports were adopted showing that civil cases settled by a three-fourths vote of the jury; that farmers and manufacturers be placed on a level in tariff legislation; asking for further legislation to control trusts; favoring equal taxation of men and women; and women calling for legislation that will aid the Food Commissioner in preventing adulteration and securing pure food, and asking for facilities at the Agricultural College so that women may be admitted. Favoring the constitution of the State lecture system and the employment of deputy lecturers, and authorizing the use of a portion of the defense paid on proceedings to compel railroad companies to comply with the law relative to the sale of thousand mile tickets good for any member of the purchaser's family.

Among the closing acts of the Grange was the adoption of a special report of its Executive Committee for a system of co-operative business methods, presumably on a similar plan as the National Union, although it has not been determined yet. It also committed the Order to the idea of conducting mutual fire insurance companies under its auspices, but a proposition to also include life insurance was rejected.

The State Live Stock Breeders' Association met at Lansing Dec. 30. President George H. Beck, in his annual address, continued the attack made by the State Grange upon Secretary Morton for his alleged lack of sympathy with the agriculturists. Papers were read by Wm. Ball, of Hamburg; Dr. Manly Mills, of Woodland; and Prof. Eugene Davenport, of Woodland.

The following officers were elected by the Galloway Cattle Breeders' Association: President, George Coleman, Howell; Vice-President, A. C. McQueen, Millington; Secretary-Treasurer, Henry Gilman, Jr., Franklin. The Lincoln Sheep Breeders elected J. G. Gibson, of Darfield, Ontario, Vice-President, and J. T. Daniels, of Elva, Mich., Secretary and Treasurer.

A resolving resolution was adopted: It is proposed by the Wilson Tariff Bill now before the Congress of the United States to place wools and meats upon the free list, and to exempt the same from the payment of duties. If not fatal to the interests of the flocks and herds of the United States, it will mean immense sums of money and many years of time have been expended to build up and improve, it is hereby resolved by the Stock Breeders' Association of Michigan, in annual convention assembled, that we ask Congress, in the interest of the United States, that the same treatment be accorded their industries as is proposed to be given to other industries of the country, which are in no way more National or beneficial in character than those we represent. We therefore ask Congress to give to the personal appeals of the manufacturers and farmers.

NEW HAMPSHIRE. The State Grange met at Manchester Dec. 19. Worthy Master N. J. Bachelder presiding. In his annual address he said that 14 subordinate Granges had been organized during the year, making the total number in

the State 173, with an aggregate membership of 13,242. There are 12 Pomona Granges and no subordinate or Pomona Grange became dormant during the year. The Grange Mutual Fire Insurance Company has closed another year of very successful operation. The State Horse Breeders' Association, Dairy-men's Association, Horticultural Society, and the Poultry and Pigeon Association were mentioned and commended. The question of taxation was discussed at length, and the subject recommended for the earnest study of the subordinate Granges.

A large part of one day's session was taken up with the discussion of the Agricultural College. Resolutions were presented and finally adopted by a large majority, stating that the funds which have supported and are to maintain the New Hampshire College of Agriculture were given chiefly to promote agricultural education, which is feared from President McKinley's inaugural address, that his idea is to have the course in agriculture as one of five courses of equal importance, thus giving to the agricultural education one-fifth part of the funds, when, in fact, perhaps it would not be an exaggeration to say that four-fifths of the funds should be devoted to agricultural education, in order to honestly comply with the intention of the donors.

The following officers were elected: Master, Nahm J. Bachelder, of East Andover; Overseer, J. E. Shepard, of New London; Lecturer, E. J. Burnham, of Manchester; Steward, E. L. E. Rugg, of Keene; Assistant Steward, H. B. Holman, of East Tilton; Chaplain, Rev. George W. Patten, of Dublin; Treasurer, Hon. J. M. Taylor, of Sanborn; Secretary, E. C. Hutchinson, of Milford; Gatekeeper, Adam Dickey, of Manchester; Ceres, Mrs. N. J. Bachelder, of East Andover.

## NEW JERSEY.

At a Farmers' Institute held at Mt. Holly Dec. 8 and 9, Chas. Parry was Chairman, and Henry I. Budd, Secretary. Messrs. Geo. Wildes, New Egypt, and Frank Jessup, of Cinnaminson, discussed the causes of depression in farm prices. Wm. L. Rappin, of Fellowship, read a paper on "Advantages of Education in Farming." Thos. J. Bain, one of "The Most Profitable Crops for Burlington County Farmers;" Samuel C. Adams, of "Asparagus and Its Varieties;" Dr. A. E. Conroy, of "Tuberculosis;" E. G. Harrison, one on "How to Build Stone Roads Without Burying the Farmers."

The election of officers resulted as follows: President, John M. Lippincott, Moorestown; Vice-President, Isaac Lippincott, Moorestown; Secretary, Henry J. Burr, Mount Holly; Treasurer, James Lippincott, Mount Holly; Directors, Emmer Roberts, Fellowship, of the Burlington Society; R. F. Bishop, Beverly, of the Coopersville Club; G. L. Gillingham, Moorestown, of the Pomona Grange; G. W. Braddock, of the Meriden Grange; Robert Taylor, of the Columbus Grange; A. Satterthwaite, of the Crosswicks Grange; Edward Cook, Burlington, of the Edgewood Grange; H. B. Lippincott, of the Pemberton Grange; Ray Hilliard, of the Moorestown Grange; W. Jessup, of the Moorestown Grange; and H. C. Lippincott, at large. Delegates to the State Board, Thomas J. Bean and Joseph J. Mutlack, both of Moorestown; to the Horticultural Society, Charles Parry, of Parry, and Clayton Conroy, of Cinnaminson.

## NEW YORK.

Grange No. 750, Penfield, Monroe, Co., elected the following officers: Master, J. R. Rundle; Secretary, B. S. Northrup; Overseer, W. S. Miller; Steward, J. Wycher; Treasurer, C. N. Leonard.—C. R. JUMP, Penfield.

## OHIO.

The Farmers' Institute held at Bellefontaine Dec. 9 was lively and interesting. President Longfellow occupied the Chair, and Geo. A. Henry read an instructive paper on "Raising Potatoes for Market." Mrs. John May read a bright essay on "Should Girls be Instructed in Farm Management?" The next meeting will be held Saturday, Jan. 13.

The Farmers' Annual Institute was held in DeGraff Dec. 6 and 7. President John Horn presided. Grand Master J. H. Brigham made an address on "The Farmers' Share," and in the evening, "To Boys who are Ambitious." A number of interesting papers were read and discussed.

## VERMONT.

The 23rd annual meeting of the Vermont State Grange opened at West Randolph Dec. 16, with over 100 delegates, it being the largest gathering since its organization. All of the officers were present. Worthy Master Alphonse Messer, of Rockport, presiding. The officers' report shows an increase in membership. The Secretary reported three new Granges—Essex, Morrisville, and Pawlet. The Order now has 2,202 members, a gain of 269 the past year. The Treasurer reported receipts of \$1,329, with a balance of \$301. Masters of subordinate Granges report every thing flourishing and every Grange in good standing.

## WASHINGTON.

The State Grange adopted resolutions denouncing Secretary of Agriculture Morton and recommending referendum; favoring the amendment of the free coinage law of 1837, and reaffirming their faith to the cause of woman suffrage.

## THE WEATHER BUREAU.

Secretary Morton Proposes to Extend Its Functions.

Secretary Morton is seeking to extend the operations of the Weather Bureau to two important particulars. He has directed Chief Harrington to prepare some plan whereby through the Weather Bureau service reliable data can be collected relating to sanitary conditions, and to the relation which may exist between certain climatic and atmospheric conditions and the prevalence of certain forms of disease, especially those of an infectious or epidemic character, such as the grip. The Secretary has had considerable talk with Surgeon-General Wyman, of the Marine Hospital, who expressed him as highly in accord with the possibilities for usefulness which the carrying out of this plan may achieve. Mortuary statistics are already supplied through this source, and its extension to cover general sanitary conditions and the prevalence of disease would be without additional cost to the Government.

Another direction in which Secretary Morton desires to extend the Weather Bureau service is in ascertaining the extent of available precipitation in the arid and semi-arid regions available for irrigation, in the form of snowfall upon the mountain ranges. On this subject he has addressed to Chief Harrington a communication in which he requests him to acquire through the Weather Bureau service such data as to the depth and extent of the snowfall upon the mountain ranges of the arid regions and the reduction of such observation and measurement to inches of water for each area examined and measured at all the observer stations in mountainous regions. He desires this to be at once undertaken at those stations adjacent to or in the arid regions of the country where the crops must be dependent upon irrigation.

## Hood's is Good

## BECAUSE

## Hood's Cures

It possesses curative power peculiar to itself, and has a record of cures unequalled in the history of medicine. The severest cases of Scrofula, Bait Rheum, Dysepepsia, Catarrh, and Rheumatism have been cured by it. If you cannot get any of these complaints give Hood's Sarsaparilla a trial. Sold by all druggists. \$1 per bottle; six for \$5.

Hood's Pills cure Constipation by restoring the peristaltic action of the alimentary canal.

## PROF. C. W. DABNEY.

## The New Assistant Secretary of Agriculture.

President Cleveland and Secretary Morton have been very deliberate in selecting an Assistant Secretary of Agriculture, though the friends of some 40 different gentlemen were pressing anxious that their favorite should be appointed. One reason for this was that Assistant Secretary Willis had taken charge of the Department's exhibit at the World's Fair, had made comprehensive plans for the same, and was carrying them out with great ability and success. It was desirable that he should complete his work. Mr. Willis had promptly placed his resignation in the hands of the Administration when it came into power, but was requested to continue in office until he had finished up his World's Fair work, which he did, and then renewed his application to be relieved. It was finally determined that he should hold on until Jan. 1.



The President long ago informed Secretary Morton that he would appoint one whom he should recommend, but the appointee must be a Southern man, since so far the Department has been under the charge of northerners, without any representative of the distinctive agriculture of the South. Secretary Rusk was from Wisconsin, and Assistant Secretary Willis from Michigan, and Secretary Morton is from Nebraska.

Prof. Chas. Wm. Dabney, Jr., who has been appointed and confirmed, is a Southerner of the Southwestern. He is a native of Hampton, Sydney, Va., where he was born in 1855. His father, Robert Lewis Dabney, was for many years Professor in the Union Theological Seminary of the Presbyterian Church, and is now Professor of Philosophy in the University of Texas. Mr. Dabney, Jr., was Stoneville, Texas's chief of staff and biographer. Chas. W. Dabney graduated from Hampton-Sydney College in 1873, with the degree of Bachelor of Arts. After teaching a classical school for one year he entered the University of Virginia and graduated there in 1877. From 1877 to 1878 he was Professor of Chemistry and Mineralogy in Emory and Henry College, Virginia, and from 1878 to 1880 he was studying chemistry, physics, and mineralogy at Berlin and Göttingen, and received the degree of Ph. D. at the university of the last named city.

He filled the position of Professor of Chemistry in the University of North Carolina, and was elected State Chemist for the year 1880-1881. In 1881 he was Director of the North Carolina Agricultural Experiment Station at Raleigh, and State Chemist of the Geological Survey and Board of Health. While in Raleigh he published several standard papers on points in organic and agricultural chemistry, and a number of bulletins and reports of the experiment station. He was the first to discover the phosphate deposits in North Carolina. He also made explorations for pyrites, and collected the useful minerals of the State for exhibition in the State Museum. He represented North Carolina at various expositions, and was elected Chief of the Department of the Government and State exhibits of the New Orleans World's Exposition in 1884-85. He published much literature on drinking water, and received the degree of North Carolina. Dr. Dabney advocated technical education in various papers and lectures, and was instrumental in the establishment of an industrial school at Raleigh, which has since blossomed into a college of agriculture and mechanic arts. He was elected by the Board of Trustees of the University of Tennessee to the Presidency of that institution in 1887, and has done much to promote its progress in the erection of laboratories and the enlargement of its curriculum. In 1880 he received the degree of LL.D. from Davidson College. He is a member of several German and American Chemical Societies, the American Institute of Mining Engineers, and of the Virginia Historical Society.

## THE TOBACCO GROWERS.

They Protest Against Any Reduction of the Duties.

The Chemung Valley Tobacco Growers' Association held its annual meeting in Elmira, N. Y., Dec. 19. The address of President Farham was mainly devoted to a demand for the maintenance of the present tariff on Sumatra tobacco.

A committee, consisting of Messrs. Hill and Shockey, of Addison; Cassada and Roberts, of Elmira, and Kingsbury, of Corning, were appointed to prepare proper petitions to the President and Congress, and to present them to the change in the tariff contained in the Wilson Bill. They reported two petitions, as follows:

To the Honorable Senators and Representatives of the United States in Congress Assembled: We, the undersigned farmers, growers of leaf tobacco, and others interested, to respectfully and most earnestly petition your honorable body to oppose any and every attempt to reduce the duty on foreign grown wrapper tobacco.

Inasmuch as the present rate of duty has resulted in a benefit to the tobacco growing interests of this locality, and has restored it to a fairly remunerative condition, we view with alarm and consternation the proposed reduction as embodied in the Wilson Bill, viz., \$1 per pound on unwrapped leaf tobacco, and \$1.50 on wrapped cigar wrapper tobacco.

We believe from past experience that the American grower of cigar wrapper tobacco cannot successfully compete with the foreign grown wrapper tobacco, and the proposed change, ever praying, we thus petition.

The undersigned respectfully represent that they are, without exception, Democrats residing in Chemung, Steuben, and Tioga Counties, in the State of New York; that in a large part of the State the tobacco growing is the most important agricultural interest.

The tobacco growers throughout said district have made large investments in buildings, preparation of lands, and other improvements necessarily incident to said business, and that there is a very large amount of fixed capital especially invested by the farmers for the purpose of carrying on said business, which would become unavailable and be practically destroyed in case said business should become unprofitable as to make it necessary to abandon the same.

The very much of said capital has been so invested in reliance upon the tariff upon wrapper leaf tobacco of \$2 per pound as fixed by the law of 1880. We believe that it would be unjust, unfair, and very injurious to a large portion of the people of this State to reduce the duty on wrapper leaf tobacco from \$2 to \$1 per pound, as proposed by the Wilson Bill.

We therefore urgently request you to use your best efforts for the retention of said duty as it now is.

The New England Tobacco Growers' Association is circulating a petition to Congress which alleges that a reduction of duty of one-half on Sumatra tobacco, as proposed by the Wilson Bill, will probably result in a loss of revenue, for 100 per cent. more Sumatra wrappers must be imported than in 1885-89 to equal the amount realized in duty in 1891-93. It is further alleged that the reduction in duty will lessen the cost to manufacturers of cigars \$3 per pound, but will not benefit the consumer. The petitioners pray that if the duty on Sumatra leaf be reduced to \$1 per pound and the duty on cigars be increased to \$1 per pound and 25 per cent. ad valorem, that the internal revenue tax on cigars be in-

creased \$3 on those wrapped with foreign tobacco. The petition is being circulated in Connecticut, Massachusetts, Vermont, and New Hampshire, and an effort is being made to get 100,000 signatures. A similar petition is being circulated in Florida and Georgia, and is to be circulated in New York and other tobacco growing States.

## Special Offer.

Worthington's Magazine is a first-class, well-edited, well-illustrated periodical. Its regular price is 25 cents a number, or \$2.50 a year. We will send it free of charge to any subscriber who will send us THE AMERICAN FARMER one year for \$2.50.

## "TOBACCO SPIT EVERYWHERE"

How often have you noticed it? Ladies' eyes glaze with horror as they scornfully gape up their dress and up













### Uncle Silas's Religion

Uncle Silas has recently joined the church, and Uncle Silas needed it if anybody did. One day he stopped at my gate to ask about the cook's health. "How about your joining the church, uncle?" I asked, after I told him the cook's health was fair. "I've done it, boss," he replied, proudly.

"How about having religion and chickens at the same time?" I said, jokingly.

"De good Lawd will pervide, honey," he answered, piously.

"Religion, probably, but not chicken," I ventured.

"Yas, honey," and his eyes twinkled, "de good Lawd is gwine ter he'p dem dat he's derelvers, an' I'se able-bodied yit, 'tank de Lawd."—*Detroit Free Press.*

### The Way He Wanted to Die

A peasant lad who, when asked by a gentleman how his father was, replied: "Ah, my poor father died last Wednesday, your honor."

"I'm sorry, indeed, to hear it," said the other. "It must have been very sudden. What doctor attended him?" "Ah, sir," said the boy, "my poor father wouldn't have a doctor; he always used to say he'd like to die a natural death."—*Seventy Years of Irish Life.*

### Quite Plain.

Phrenologist—You have been married some years.

Patient (in surprise)—By George! That's true. How could you tell?

Phrenologist—Your bump of hope is a dent.—*Puck.*

### Another Kind.

Young Wife—I took great pains with that cucumber salad, John, and I hope you enjoyed it.

Husband (anxiously)—I'm afraid, my dear, that I took great pains with it, too.—*Pearson's.*

### That Man Got Off.

Judge—What sort of a man, now, was it you saw commit the assault?

Policeman—Sure, your honor, he was a small, insignificant man—about your size, your honor.—*Vogue.*

### His Letter.

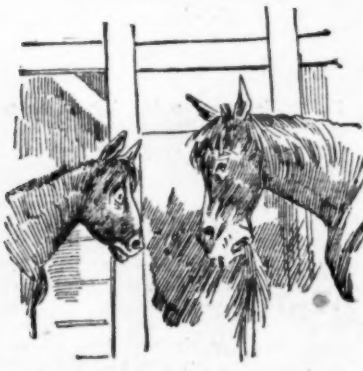
DEAR FATHER: I have found work at last—even sooner than I expected, and with a friend that sticks to me always, and with whom I spend many hours.



My work is a little confining, but I have my evenings to myself. You will be pleased to hear that I am thrown with men who have been in the custom of handling money and valuables, and also that my presence was earnestly sought after.

Your loving Son, P. S.—My friend has a well-rounded character.

### A Maternal Rebuke.



Colt—Did you ever have the hay-fever, ma?

Ma—Neigh, my son; but if you get off another one like that you'll have an attack of mal-de-mare.



He (passionately)—Do you ever think of marriage?

She (frankly)—What else does a girl have to think about?

### Extra Precautions.

Hotel Clerk—Did you tell that old gentleman from the country that he mustn't blow out the gas, as I told you?

New Bellboy—Yis, sorr, I blowed it out myself, sorr.—*Judge.*

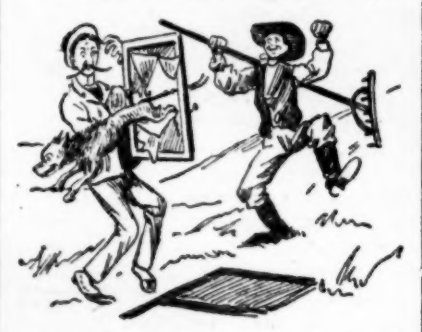
### A Beautiful Finish.



Picture Agent—Oh, farmer, I have in here a crayon portrait, and will make you one like it for \$5.



"You see it is beautifully finished."



Dog—Yes, it is; here goes for my old Barnum hoop act—whoo! la!

Perversity of Inanimate Nature.

A man in Norway, Me., raised nine large pumpkins from one seed. If pumpkins were worth \$1 a pound, one wouldn't grow from less than nine seeds—or would it be better to put it the other way and remark that if there were less seeds in pumpkins and less pumpkins in seeds, there would be more dollars in them.—*Levinson Journal.*

### His Voice.

"George," said a loving wife, "I wish you would sing two or three lines of a song for me."

"What on earth do you want me to do that for?"

"There is something I want you to bring home, and I've forgotten what it is, but I think I'll remember it if you'll sing."

The good natured husband complied, and the charming wife said:

"I remember now. It's a file I want."—*Exchange.*

### An Evasive Answer.

Judge (to witness)—What is your age, Senora?

Witness—I am over 20.

"You must tell me the exact truth."

"Between 20 and 30."

"But when will you be 30?"

"To-morrow, my lord."—*La Union de Valparaiso.*

### The Reason.

Nurse girl—I lost track of her child, mum; and—

Mistress—Good Heavens! Why didn't you speak to a policeman?

Nurse girl—I was speaking to wan all dthe toime, mum.—*Puck.*

### Not Practical.

"Well, Uncle Silas, your boy is home from college?"

"Yes, wuss luck."

"Worse luck? Why?"

"He's larned so much he can't plow nothin' but my feelin', nor harrow nothin' but my soul."—*Harper's Bazar.*

### A Man of Taste.

Frayed Fagan (as housewife gives him a pair of russet shoes)—Now, where's the derby hat and sack coat?

Housewife (in surprise)—Derby hat and sack coat? These shoes are all I've got, and all you'll get.

Frayed Fagan (throwing shoes down in disgust)—Want me to wear russet shoes with a high hat and Prince Albert coat? No, madam! If you were raised in Brooklyn, you needn't think I was.—*Puck.*

### Advantage of a Title.

"Sir, I think you had better shine my shoes and wash the dishes," said a wealthy New Yorker to his sister, who moves in aristocratic circles.

"What do you mean by such nonsense?" she asked.

"No nonsense about it. I see you are flirting with an Italian count. If you are going to marry him you ought to be fitting yourself for the position."—*Texas Siftings.*

## THE DAIRY.

### Skimmings.

Corn is the most prolific crop for fodder we can grow. A yield of 20 tons to one acre is easily made, and as one ton feeds one cow for 40 days, nine tons will feed one for 365 days. Thus, two cows may be fed a whole year from the produce of one acre, or four cows through a whole winter. And the food is far more nutritious than grass of the best kind, as the 20 tons of stalks have at least one ton of grain, or possibly two tons, in them.

A recent decision of the Supreme Court of Minnesota places in the hands of the dairy interests of that State a powerful weapon with which to combat the butterine fraud. The Legislature of 1891 passed a law providing that all butterine sold in the State should be colored pink, under penalty of \$50 for the first offense and \$100 for each subsequent one. The butterine sellers took the ground that the law was unconstitutional and resisted the collection of the penalty on that theory. Now, however, Judge Collins, of the Supreme Court, decides that the requirement relating to coloring butterine pink is "a valid as a legitimate exercise of the police powers of the State."

One objection to silage for feeding cows is that it is not a fully perfect feed, wanting in nitrogenous matter. This, however, is supplied by adding to the silage some wheat bran and linseed or cottonseed meal, 50 pounds of silage with eight pounds of bran, and two of linseed meal gives the best possible ration, having a full quantity of all the elements required for a yield of 300 pounds of butter a year, and costs only 14 cents a day. As compared with a herd fed on dry cornfodder, with an equal quantity of grain food, and which averaged 210 pounds per cow for the year, at a cost of 11 cents per day, the silage has the best result by 90 pounds a year, worth \$25, against the extra \$10 for the food. The difference is well worth saving.

President Gilbert, of the New York Dairy Association, says this is the way to make premium butter: "As soon as the milk is brought into the creamery it is put into Cooley cans, 12 per cent. of water added but enough to raise the milk to 98 degrees, and is then put into the tanks and cooled down to 45 degrees and sets for 11 hours. The cream is ripened for 24 hours, being first warmed up to 70 degrees in winter. I churn in winter at 68 degrees and in summer at 65 degrees. As soon as the butter separates I add cold water to the mass to crystallize the grains, then draw off the mixed buttermilk, add more water until the water shows no trace of buttermilk."

The Department of Agriculture's Simple Plan. At the request of the Secretary of Agriculture, the Chief of the Bureau of Animal Industry has furnished the following simple directions for the sterilization of milk: The sterilization of milk for children, now quite extensively practiced in order to destroy the injurious germs which it may contain, can be satisfactorily accomplished with very simple apparatus. The vessel containing the milk, which may be the bottle from which it is to be used or any other suitable vessel, is placed inside of a larger vessel of metal, which contains the water. If a bottle, it is plugged with absorbent cotton, if this is at hand, or in its absence other clean cotton will answer. A small fruit jar, loosely covered, may be used instead of a bottle. The requirements are simply that the interior vessel shall be raised about half an inch above the bottom of the other, and that the water shall reach nearly or quite as high as the milk. The apparatus is then heated on a range or stove until the



water reaches a temperature of 155 degrees Fahrenheit, when it is removed from the heat and kept tightly covered for half an hour. The milk bottles are then taken out and kept in a cool place. The milk may be used any time within 24 hours. A temperature of 150 degrees maintained for half an hour is sufficient to destroy any germs likely to be present in the milk, and it is found in practice that raising the temperature to 155 degrees and then allowing it to stand in the heated water for half an hour insures the proper temperature for the required time. The temperature should not be raised above 155 degrees, otherwise the taste and quality of the milk will be impaired.

One of the most extraordinary circumstances in connection with scientific belief against practical work is the persistent allegation of Prof. Sanborn, of the Utah Station, to the effect that the balance of results are against silage, as compared with even inferior cornfodder cured in the shock. And this is said in spite of the numerous evidences given by practical farmers and dairymen, who have year after year gone on with their silage in feeding cows at one-fourth the expense of feeding them with the dried fodder or with hay. There have been instances in which failures have been made with silage, but it has been in much the same way as some farmers fail in growing root crops, or as large crops of other kinds as many other farmers do, or simply because they do not know how or will not learn. Doubtless less than one in a hundred who have tried ensilage have failed in making it useful, and it would be too much to expect that everyone should succeed. That the very large majority, however, who have tried it have made it successful is a strong evidence that Prof. Sanborn is wrong in his estimate of it.

### Babcock Test Pointers.

Prof. Farrington, of the Illinois Experiment Station, in Bulletin No. 27, discusses some points ascertained by him in his experiments with the above test, and gives the following cautions to its users:

First. An acid having 1.82 sp. gr. should be used with milk at 60° to 70° Fahr. If the acid is stronger cook the milk to a lower temperature. Somewhat weaker acid can probably be made to work all right by warming the milk.

Second. When measuring the acid into the test bottle, hold the bottle at an angle that will cause the acid to follow the inside walls to the bottom of the bottle and not drop through the milk in the center of the bottle. If properly poured into the test bottle there will be a distinct layer of milk and acid, with no black color between them.

Third. Thoroughly mix the milk and acid as soon as measured into the test bottle. A better separation of fat is ob-

tained by mixing the acid rather than by allowing the milk to stand unmixed in the bottle until enough tests have been made to fill the centrifuge.

Fourth. After the centrifuge whirling of the test bottle in the centrifuge, add hot water until the milk is filled up to the neck only; run the centrifuge one minute, then fill the neck of the test bottle with hot water and run the centrifuge another minute. Adding the necessary hot water in two portions is often a great help in getting a clear separation of fat. When the test bottles are finally taken from the centrifuge, they are put into hot water 140° to 160° Fahr., and the per cent. of fat read at that temperature.

Fifth. Too low results will be obtained if the centrifuge does not have sufficient speed. The machines have to be watched, as constant use wears some of them so the speed designed by the manufacturer is not obtained.

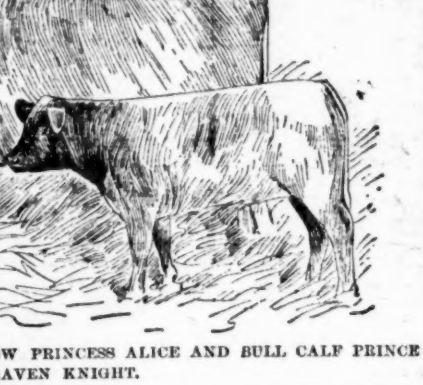
Sixth. When testing skim milk or buttermilk which have a very small per cent. of fat (two-tenths of one per cent. or less), the reading of the per cent. of fat should be made immediately on taking the test bottom from the centrifuge. If this is not done and the test bottle cools before taking the reading, the contraction of the liquid in the bottle will often leave the fat spread on the inside surface of the measuring tube so that it is not seen but has the appearance of being only a dirty tube. If read when taken from the machine the small globules of fat can be seen and estimated.

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The simplest plan is to take a tin pail and invert a perforated tin pie plate in the bottom, or have made for it a removable false bottom perforated with holes and having legs half an inch high, to allow circulation of the water. The milk bottle is set on this false bottom, and sufficient water is put into the pail to reach the level of the surface of the milk in the bottle. A hole may be punched in the cover of the pail, a cork inserted, and a chemical thermometer put through the cork, so that the bulb dips into the water. The temperature can thus be watched without removing the cover. If preferred an ordinary dairy thermometer may be used and the temperature tested from time to time by removing the lid. This is very easily arranged, and is just as satisfactory as the patented apparatus sold for the same purpose.

Artificial limbs are usually made of willow wood on account of its lightness.

## THE ORCHARD.

### Onlinings.

Apple receipts for November were only 68,180 barrels. Last year for the same month they were 147,635 barrels. It has been estimated that this year's crop of Florida oranges will be between 4,000,000 and 4,500,000 boxes. Fall storms injured the oranges badly, and in consequence prices are ruling lower than last year.

A good wind-break of trees on the farm will save many dollars' worth of fruit by protecting the orchard from winter blasts. Evergreens and spruces make the best wind-breaks, because of their thick foliage.

We have something new from Hawaii. It is a leaf-eating beetle, and feeds indiscriminately on all kinds of fruit trees. It came originally from Japan, and is known in Hawaii as the Japanese bug or leaf eater.

Sixty-five and a half million pounds of fruit were shipped from San Jose, Cal., during the season just ended. Of this amount 28,639,520 pounds were prunes, an illustration of the remarkable growth of prune growing in the past few years. Eight million pounds of Bartlett pears were among the shipments.

When large limbs are cut, no stump should be left, but cut close to the trunk, and the wound painted after it has seasoned a few weeks. A cheap and efficient preparation for this is good white or red lead and linseed oil, with a little mineral paint, if desired, to harden the mixture. Do not use turpentine, and do not paint the wound until dry, as the paint and oil will not adhere, but peel off.

### FRUIT TREE PROFITS.

What Can be Done on Five Acres of Land.

HAVING been born and brought up a farmer in western New York, I thought I had become quite well versed in farm management when I had attained the age of 40 years. But not until I became the possessor of a village lot of five acres, which I now occupy, have I learned the importance of proper management of land for profit.

Some 20 years ago I came into possession of this village property, and as I intended to make the same a permanent home, I questioned the propriety of keeping a cow, as had the former occupant. I will say in explanation that one and three-quarters acres of the lot were devoted to highway purposes, garden, house, barn, apple orchard and adjacent grounds for yard purposes. The central and rear part of the lot, containing three and one-quarter acres, was clear of any obstruction.

This had formerly been the cow pasture. On mature reflection I decided to set this out in hops, as that commodity had recently touched 75 cents per pound and was likely to reach \$1 before another harvest.

Three years later found me with the hop fever entirely off. My first crop of hops was a light one, and sold at 25 cents per pound; the second and last one, hard and dull at any price. A year or two later I disposed of them at \$1 per bale. Profit and loss in the hop deal resulted in a large experience for the amount of land under cultivation, and a lack of moral courage to even attempt to strike a balance.

Fruit growing next engaged my attention. I set 468 Dwarf pear trees in the Spring of 1878 and 1879, and in the Spring of 1884, 198 German Prunes. Three years later I set a few peach trees, and in the Spring of 1891 30 more German Prunes and 30 Italian Prunes. In 1892 I planted 30 Early Richmond cherries, and last Spring 75 standard pear trees, consisting of Bosc, Clingstone, and Bartlett. Now, nearly or quite all of these trees stand on three and one-fourth acres of ground, the distance between rows and trees being 13 feet. Because the trees were planted at intervals, the yield of fruit has not been very great. It is a better plan when planting fruit trees to set the whole plot at once. The greater proportion of these trees, however, are of bearing age and have many times paid for themselves and the land they occupy in profits resulting from the sale of fruit.

Previous to last season I planted potatoes or beans on this same plot of ground each year since setting the first lot of trees receiving per acre as much or more than the average farmer of this Township in like crops from ground clear from trees or other obstruction.

I can safely estimate my income from this plot of ground for each subsequent year indefinitely from \$800 to \$1,000, and that the cost of fertilizers, cultivation, care of trees, securing the crop, etc., not exceeding 15 per cent. of the above estimated amount yearly.

Last Spring I decided to crop but a small part of the ground, planting the same to potatoes among the smaller trees, cultivating the remainder for the benefit of the trees and fruit only. However, in July I sowed nearly two acres of the pear orchard to strap-leaved turnips, securing a good crop, besides having a beneficial effect in preventing early ripening and dropping of the fruit.

The western New York farmer, or any other farmer that is situated in what is called the fruit belt of the United States, and the possessor of five acres or less suitable for fruit growing, can't afford to keep a cow, unless she will feed and milk herself, and put up a two gallon jar of butter per day as an offset for having been a previous incumbent of the ground.

One will soon ascertain the fact that if they take the trouble to look up the

nursery stock question that there has not been a more favorable time to purchase fruit trees in a number of years than the present.

Yes, let farmers of the great West and Southwest continue to furnish us with roller flour from Northern hard, and choice sirloin cuts from hog and steer, while we tickle their nose and palate with luscious fruits, each of which are suitable offerings to the gods.—M. N. Cook, South Byron, N. Y.

### Grape Pruning.

February and March were for a long time considered to be the only proper months for grape pruning, and by some grape growers this opinion is still held. Fall pruning, or any time after the leaves drop, is now becoming quite general, however, and it certainly has its advantages. There are also some objections to it. Some wood not thoroughly ripe may remain, which will winter kill; whereas if the pruning is left till midwinter all wood that is unripe will be killed, and the other easily recognized. After a little cold weather immature wood will be sure to show itself, and with proper observation there is no danger of mistaking it.

### A Home in Alabama.

EDITOR AMERICAN FARMER: We came here from Illinois three years ago. Have been here Summer and Winter, so think we have been here long enough to see the country as it is, and can sincerely say it is the best all-the-year-around climate we have ever lived in.

We are located in the pine woods, about the center of Baldwin County, north and south, and 12 miles east of the Bay Shore. We, as well as our Northern visitors, pronounce the climate very healthy. We have a long season of warm weather, but the thermometer has not reached 100 more than half a dozen times since we came here.

Many come South to spend the Winter, but we consider the Summer the most pleasant part of the year. The soil is poor, but with proper fertilizing it produces well. In the field we raise corn, oats, rice, sweet potatoes, and an abundance of hay, which grows without seeding the second year the land is cultivated.

Can grow plenty of vegetables and berries, and abundance of fruit, excepting apples, but am satisfied there are varieties that will do well here. The schools and churches are few and far between, but nothing to hinder having both where there are settlers enough. We have formed many pleasant acquaintances here, and have concluded human nature is about the same North and South, and a hearty welcome awaits all good substantial citizens. In politics there is no trouble whatever, but do not think this is the place for a fanatic on either side of the subject.

Now, don't come here expecting to find fortunes ready made, waiting your arrival; but to those having a little money and willing hands to take hold of the advantages nature has placed here to help them, come here in preference to going to the cold Northwest. It is a difficult task for us all to see alike, but hope this will give no false impressions.—Mrs. C. D. Slosson, Harlow, Ala.

### THE RUSSIAN THISTLE.

Senator Hansbrough Speaks in the Senate Concerning it.

Senator Hansbrough made a speech in the Senate Dec. 18 in support of his bill appropriating \$1,000,000 to exterminate the Russian Thistle. This weed is the dread of agriculture. Wherever it has full sway man retreats. Already 50 counties of Nebraska, Iowa, Minnesota, and Wisconsin are infested with the weed, and the farmers are powerless. It was brought to this country about 15 years ago by Russian immigrants, and has been rapidly spreading, until now it is a menace to the whole grain growing region of the West. The present loss to the farmers of the West is already close to the amount asked for in the bill.

Prince Galitzin, the eminent Russian traveler and scientist, now in Washington, states that he has traveled through the country in southwest Siberia, extending over 500 or 600 miles in one stretch, where the Russian Thistle had driven out every other kind of vegetation and caused hundreds of farmers to abandon their lands. The great irrigation works begun a few years ago by the Russian Government in southwestern Siberia had been abandoned largely on account of the fact that the Russian Thistle had taken possession of that region.

The local Governments had attempted to check its spread, but found themselves unequal to the great emergency and the provincial authorities were appealing to the National authority for assistance. In Russia, according to Prince Galitzin, there was but one way to cope with this terrible pest, and that was by attacking it early in the Spring when it first appeared with other vegetation and either digging it or pulling it from the ground. If left to mature it would scatter its seeds in every direction. The Senator said he found that our Agricultural Department had reached the same conclusion arrived at by the Russians.

I can safely estimate my income from this plot of ground for each subsequent year indefinitely from \$800 to \$1,000, and that the cost of fertilizers, cultivation, care of trees, securing the crop, etc., not exceeding 15 per cent. of the above estimated amount yearly.

Last Spring I decided to crop but a small part of the ground, planting the same to potatoes among the smaller trees, cultivating the remainder for the benefit of the trees and fruit only. However, in July I sowed nearly two acres of the pear orchard to strap-leaved turnips, securing a good crop, besides having a beneficial effect in preventing early ripening and dropping of the fruit.

The western New York farmer, or any other farmer that is situated in what is called the fruit belt of the United States, and the possessor of five acres or less suitable for fruit growing, can't afford to keep a cow, unless she will feed and milk herself, and put up a two gallon jar of butter per day as an offset for having been a previous incumbent of the ground.

One will soon ascertain the fact that if they take the trouble to look up the

Opinions rendered as to the novelty and patentability of inventions and validity of patents. Rejected applications are promptly attended to.

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